The Journal of the
American Medical Association

VOL. XXXIII CHICAGO, ILLINOIS, OCTOBER 28, 1899. No. 18.

Original Articles.

OSTEOTOMY*.

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This operation, though a simple one and productive of the most excellent results, is, I fear, too little appreciated by the general practitioner, and even by surgeons. There is no more satisfactory operation in surgery, nor one that is applicable to such a variety of conditions. It is safe, speedy, easily performed, seldom followed by any unpleasant consequences, and most effective in relief. Although it is one of the most common operations in my hands, I can safely say that I have not, for ten years, had a single drop of pus following its performance. To accomplish this desirable end, however, it is necessary that the surgeon shall be absolutely cleanly, and that he shall not introduce into the wound any elements of suppuration.

The application of the operation is wide; in deformities following fractures; in ankyloses of joints, from whatever cause; in the distortions of bone produced by rickets, osteomalacia, etc., osteotomy has no substitute that is at all to be compared in efficiency.

I have long since abandoned the method of wedge-shaped osteotomy, since the injury to tissues is greatly increased by the extra manipulations, and suppuration is much more common. In place of removing a wedge from the convexity of the deformed bone, it is better to permit the blood-vessels to throw out sufficient callus at the convexity to fill in the opposite wedge-shaped space produced by the straightening of the bone. The resultant union of the fragments is as strong as in the other method, and, as already said, I have never had a drop of pus since abandoning the cuneiform method; before that time, in spite of every precaution, a certain proportion of cases would suppurate on account of the injury inflicted to the surrounding soft parts during the operation. As compared with osteoclasis, while, theoretically, an osteotomy produces a compound fracture, the practical outcome of the operation, if it has been aseptically performed, is that the surgeon has nothing but a simple fracture to treat. The osteoclast contuses and lacerates the soft tissues to a marked degree, and the traumatism inflicted is infinitely greater than the clean incision of an osteotomy. If the operation has been properly performed, and the limb skillfully dressed, there will be no displacement of fragments. The wound, a simple clean incision, heals by primary union, and from the moment of closure the fracture is not a compound one. The Adams subcutaneous saw leaves bone sawdust in the tissues, rendering immediate healing more uncertain. It is, however, a valuable instrument, and occasionally I employ it, even though it is not so clean and simple. I have often been amused at the cicatrices sometimes several inches in length, following the work of surgeons, while all that is necessary is simply a plunge of the scalpel to the bone, after which the osteotome is carried down along its blade; in fact, if the osteotome is very sharp, even the scalpel is unnecessary. The use of an elastic bandage, or tourniquet, is very undesirable, as the small amount of outflowing blood is of advantage in preventing the entrance of germs during the operation. An osteotome should be exceedingly sharp; it is, as its name indicates, " a bone knife;" it should be like a knife, two even planes meeting at the edge, which should not have, as has a chisel, any semblance of a shoulder in these two surfaces. The osteotome must have the best of temper, but great care must be exercised by the surgeon that the edge be not broken off by any lateral movements, and that the instrument does not become too firmly fixed in the osseous structures at any time. A firm, solid sand-bag anvil is important, and the limb must be placed so as to rest easily upon it. The line of the incision must be planned so as, in the first place, to avoid any vessels at the point of entrance, and secondly, to avoid vessels and nerves on the opposite side of the bone, in case the blade should accidentally be driven too far through the bone. Before commencing the operation, the surgeon should carefully measure with his eye or finger, the depth of the bone in that particular case, as it is exceedingly unpleasant, as has occasionally happened, to find that one has driven the osteotome, not only through bone, but also through muscles and skin on the opposite side, and even into the sand-bag. As in many other matters, it is just as necessary to know when to stop, as when to advance. Should any accident occur, or vessels be wounded, either the wound should be enlarged, or a full incision should be made on the opposite side, and the vessels secured, or injured nerves sutured.

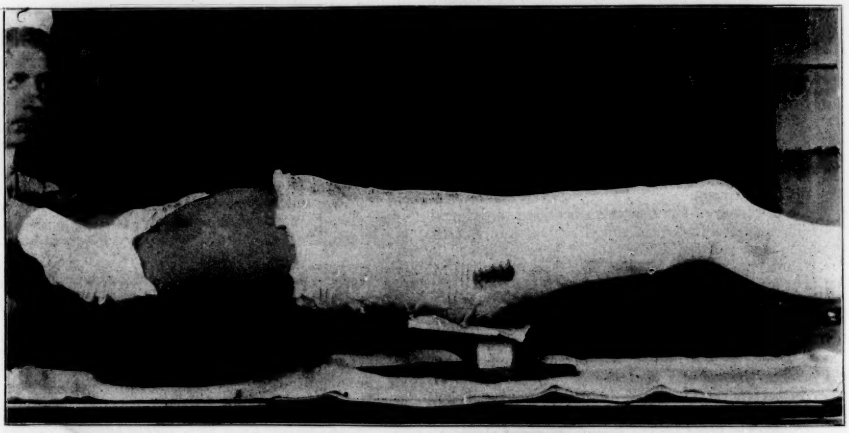
Multiple osteotomies are often necessary. I have performed as many as eight at one time, but it is very important that temporary stiff dressings shall be applied to prevent displacements of fragments and laceration of soft tissues during subsequent manipulations on the other limb, or other portions of the body. The surgeon must be careful that his hands are thoroughly cleansed before attacking fresh areas, since the secret of success lies in the scrupulous asepsis of the surgeon through every step of the operation until final closure is reached.

When hemorrhage has ceased, a single catgut stitch, deeply inserted, will close the wound, which stitch will require no attention until the cure is complete, six or eight weeks afterward. The dressings must be absolutely aseptic, as they are to remain a long time *in situ*. The primary dressings need seldom be removed until the cure is complete, even though there has been slight bleeding. There will be no decomposition beneath the plaster cast, and the only odor after the removal will be that arising from long retention upon the body.

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

Many surgeons use for dressings, binder' board, wooden or tin splints, horizontal extensions, etc., but if one understands properly the application of plaster of Paris, there is nothing to be compared with it, in comfort to the patient, in absolute rest secured, and in quickness of union of bone, while the saving of labor to the surgeon, though of secondary consequence, is immense. A thin layer of cotton, and a circular flannel bandage, should be put on the limb. The joint above and below the fracture must always be fixed to prevent muscular action and undue motion. The region of the fracture should always be dressed first, while the less important parts of the limb are reserved until the final part of the dressing, as this plan of procedure permits the surgeon to accurately regulate the position of the limb until the regional plaster has hardened sufficiently to maintain the corrected position.

Subcutaneous osteotomy of the clavicle is rarely safe, on account of the close proximity of important structures; an open section is always advisable when required for mal-united fracture or other cause.



Dressing stool under pelvis. Plaster dressing applied to body and leg.

Subcutaneous osteotomy at the upper extremity of the humerus is not an advisable operation in old unreduced dislocations, ankyloses, etc., as an open operation or excision usually secures better results. For faulty positions following fracture, and for the deformities of rickets it is occasionally of service. Great care should be taken, not only to avoid the blood-vessels, but especially the large nerve-trunks of this region. On the radius and ulna the operation is a valuable one, either for mal-union of a fracture, or for the bowing occasioned by rickets or by congenital absence of either ulna or radius.

The Spine.—Osteotomy of the articulating processes and of the ribs, with forcible correction in the rotation of lateral curvature, may come to be recognized as judicious in extreme and inveterate cases, but the multiple distortions connected with these extreme cases make restoration and improvement by such operation very problematical.

The Pelvis.—Subcutaneous section of the rickety pelvis in dystocia has been largely and very properly replaced by symphysiotomy. The operation has also been practiced through the ilium, followed by forcible compression, to bring into closer apposition the congenital deficiency of pubic bones which sometimes accompanies the malformation of parts, as seen in exstrophy of the bladder, etc., but as such an operation would lessen the strength of the pelvis, and as the neighboring soft parts usually yield sufficient tissue for the closure of the exstrophy without such bony interference, the operation is seldom justifiable.

The Femur.—Osteotomy finds its largest application in the bones of the lower extremity, especially in the deformities about the hip and knee. In the distortions following tubercular arthritic osteitis, or rheumatic or other inflammatory conditions of the joints, there is a wide field for its judicious employment.

Frequently the femur becomes fastened at a right angle of flexion to the pelvis, and locomotion can be afterward secured only by enormous lordosis. (Fig. 1.) Great adduction is not uncommon in neglected cases, the lower extremity of the femur often lying far beyond the median line of the trunk. The correction of such a distortion, which interferes most seriously with the comfort and usefulness of the individual, is a procedure that should be urged on the patient. Section may be made either with the osteotome, or Adam's subcutaneous saw, the former being preferable, for reasons already given. The division may be made through the neck of the femur in cases of ankylosis from rheumatic or other affections which are not accompanied by any large amount of bony deposit. In coxa vara also, it has been recommended to make this division, but I have had no experience in the operation for this deformity, as its desirability seems to me very problematical.

In tubercular disease, a point below the great trochanter should always be selected, provided forcible straightening is deemed unwise. In the application of *brisement force,* care should be taken in the exercise of power, that in case of an unexpected fracture, its site should be sufficiently near the upper extremity of the femur to secure proper correction. Ordinarily, in tubercular ankylosis, osteotomy between the trochanters, or below the lesser trochanter, is the best operation, the osteotome being driven down preferably in front of the

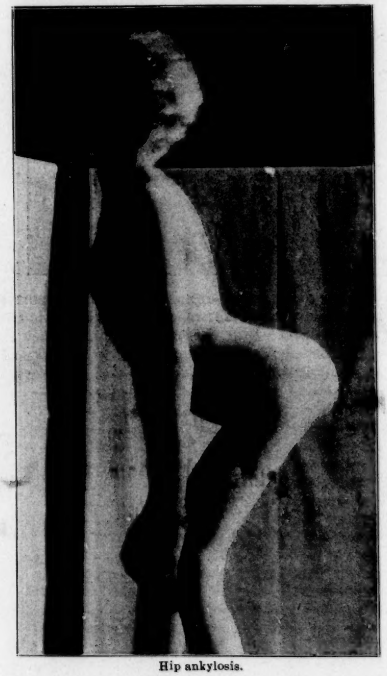
bone, although the surgeon should avoid cicatrices, and the line of old sinuses. At least one year should elapse after the closure of sinuses before attempting this method of straightening. It is unfortunate to strike into a depot of caseous material, as suppuration or infection are rendered more probable.

As the osteotome pierces the posterior wall of the femur, great care must be taken not to injure the sciatic nerve, but the dangers of laceration of the tissues are not so great as in osteotomy by the saw. After the section, if reposition is prevented by contracted tissues in front of the thigh, and if the lower fragment is drawn too much forward by such bands, or too far inward by the adductors, subcutaneous or open section of the tense tissues is advisable. The limb should at once be placed in its natural position, with slight abduction in cases of severe adduction. A rigid plaster-of-Paris dressing should then be applied from thorax to toe, the patient's pelvis being placed on a dressing stool, of pattern as per accompanying illustration (Fig. 2.); the supporting portion of metal should be so thin that the dressing can be applied directly over it; it can be easily withdrawn downward after hardening has occurred. The shoulders should be raised to equal height so as to bring the body in proper line for dorsal decubitus. Breakage of the cast at the groin is prevented by the free use of metal strips and of longitudinally reversed folds of the plaster bandage. If the pelvis is supported by hand during the application of the dressing, especially in a heavy adult, the continual motion at the hip will certainly impair the strength of the cast. Properly applied, such a dressing, although rigid, insures the patient absolute freedom from pain, and a sure position of union, consequently, it is of the utmost importance that the surgeon himself should, with the greatest care as to position, personally supervise its application. (Fig. 3.).

The amount of cotton beneath the flannel bandage should not be large, save over the sacrum, crest of the ilium, and other prominent points.

Osteotomy at the lower end of the femur for distortion, either in-knee, or out-knee, is at the present day practically always done at or above the condyles, so as not to interfere with the articulation. In the popliteal region, in fact at any point where the arteries lie in close proximity to the bone, great care must be taken that the sharp corner of the osteotome does not emerge from the bone during some too vigorous blow of the mallet, and wound the vessels so that a subsequent aneurysm be produced. When one drives a wide-based instrument through a large bone, without changing it for a thinner one, it requires experience to know when the opposite wall of compact tissue is reached. Through the condyles of the femur, it is necessary to make the section in several directions; if the instrument is withdrawn from the primary groove, the operator may be delayed in again finding the cut, and thus lose time; sections can usually be made in a radiating direction from a single point of entrance. Usually three-quarters of the bone structure should be divided, the remaining portion to be fractured by a short sharp exercise of force over the sand-bag fulcrum. It is remarkable how much force is required to complete the fracture in a bone that the surgeon desires to break after partial section, and yet how

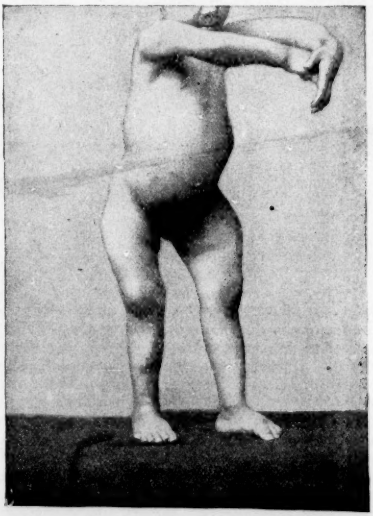
Plaster-of-Paris splint after osteotomy upper end femur.



Hip ankylosis.

easily the bone may be broken in perhaps simply stepping off a curbstone. It is unpleasant to fail to complete the fracture, and to be obliged to re-introduce the osteotome.

In applying the plaster dressing, a slight overcorrection is advisable, to prevent relapse. Great care is necessary on the part of the surgeon to secure exactly the proper positions. The dressing should extend close to the perineum, and in restless children, should include

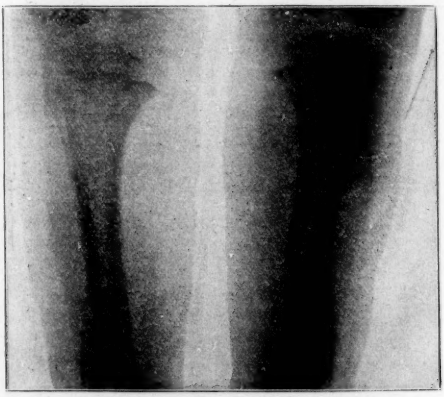


the pelvis. Such a cast will not require removal for six or eight weeks, and after it is taken off, rickety patients should wear a supporting apparatus for six months.

The Tibia and Fibula.—These two bones are the ones which most frequently necessitate the employment of osteotomy, either for lateral or anterior curves. Lateral curves, bowed legs, in young children can easily be cured by apparatus; if this fails, an operation will be necessary. Straightening can be accomplished in young children by forcible bending (Fig. 4.) or green-stick fracture over a solid wooden block, or by osteoclasis or osteotomy. In sections just below the tubercle of the tibia, care must be taken to avoid the anterior tibial artery at its perforation of the interosseous membrane.

In lateral curvatures of the leg, it is never necessary to remove a wedge from the bone, and even in extreme anterior curvatures (Fig. 5.) my present practice is to avoid the cuneiform operation for the reasons already given; nature never having yet failed to give me a strong solid bony filling in of the "V" shaped gap at the rear of the bone produced by the straightening.

If the tendo Achillis acts as a tense bowstring to induce displacement, it should be tenotomized. Slight overcorrection is advisable, and a plaster-of-Paris bandage fixing the knee and ankle should be the dressing.



Manual forcible straightening over block, for bowed legs. Skiagraph taken through plaster cast.

In the deformity following Pott's fracture of the fibula, with eversion of the foot, osteotomy of the fibula with forcible straightening, will sometimes accomplish all that is required, but additional division of the tibia is sometimes necessary.

In deformities of talipes varus, and of valgus, section of the fibula occasionally permits the bringing of the foot squarely upon its sole.

Mal-united fractures of the tibia and fibula are often advantageously benefited by section.

Osteotomy of the first metatarsal is simpler than excision and less mutilatory than amputation, in hallux valgus or distortion at the ball of the great toe.

CONCLUSIONS.

1. Osteotomy is one of the most simple, safe, and satisfactory of surgical procedures.

2. Its employment is indicated in many of the ankyloses of joints following rheumatic, inflammatory, or tubercular conditions, when forcible straightening is impossible. It is also of great service in the deformities following mal-union of fracture, and in the bending of bones resulting from rickets, congenital deficiencies, etc.

3. If aseptically performed, the injury to tissues is less than in osteoclasis, and the resultant fracture be-

comes from the moment of closure of the wound, only a simple one.

4. Wedge-shaped osteotomy is seldom necessary, even in exaggerated deformities, as a simple section is all that is necessary, the gap resulting from straightening being readily filled in with callus.

5. Plaster-of-Paris makes the best subsequent fixation splint.

DETAIL IN CLEFT PALATE OPERATIONS*.

BY STEWART L. McCURDY, M.D.

PITTSBURG, PA.

The object of this paper is to describe some new instruments and to call attention to some already in use, as well as to describe the accepted methods of operation for congenital defects of the hard and soft palate.

In all operations on the mouth or face the patient should be placed in the Murphy position, the operator sitting above the head. The Murphy position is best secured by the use of the head-rest of an ordinary operating-table, or by an extra head-rest with a body portion passed under the patient—the head-piece being placed at an angle of 45 degrees to the plane of the body. (See Fig. 10.)

Fillebrown's method of producing anesthesia is of advantage in all operations on the face and mouth. It is practically the same method as that introduced by Dr. Hayes, a dentist of Pittsburg, about fifteen years ago.

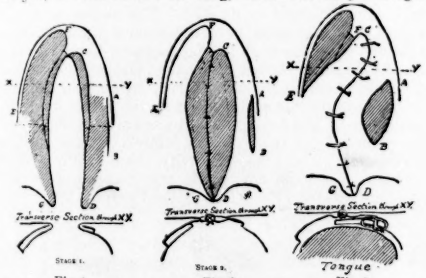


Fig. 1. Fig. 2. Fig. 3.

Davies-Colley operation.

It consists in delivering the anesthetic to the point through a small tube near the mouth, or as Fillebrown suggests, resting on the upper teeth. The anesthetic is forced through the tube by a foot bellows. With the patient in position, the Fillebrown mouth-piece can not be used as he suggests. When possible, the Davies Colley operation is to be preferred, since it furnishes normal mucous surface for the floor of the nasal cavity, and for the roof of the mouth as well, thus avoiding the exposure of raw surface. He describes the steps of the operation as follows:

The operation might be divided into three stages: Stage 1. Fig. 1. (a). An incision A B is made down to the hard palate in front, and behind through the soft palate, with its center just internal to the last molar. With a raspatory, the muco-periosteum is separated from A B inward. (b). An incision C D is made about a quarter of an inch from the cleft in front. It runs parallel to the cleft backward, and is continued to the tip of the uvula, splitting the soft palate to the depth of about three-eighths of an inch in front, and a less amount behind. The muco-periosteum between C D and the cleft of the hard plate is separated inward with the raspatory as far as the edge of the bone. (c.). A triangular flap E F G is raised from the other side of the plate, in such a way that the anterior extremity is free, and the inner margin runs parallel to the edge of the cleft at a distance of one-sixth of an inch. In the soft plate the incision is continued backward so as to split that structure in the same way as on the other side. The muco-periosteum of the hard palate internal to F G is separated inward and left attached to the edge of the bone.

Stage 2. Fig. 2. The mesial flaps, namely, those internal to C D and F G, are united by fine silk or catgut sutures; and continuously with this union the upper planes of the split soft palate are brought together. A bridge is thus formed across the whole cleft with a mucous surface directed upward, and a raw surface downward.

Stage 3. Fig. 3. The edge F G of the triangular flap in front, and of the lower plane of the soft palate behind, is united by silver wires and one or two silk sutures, to the edge C D of the hard and soft palate of the other side. A second bridge is thus formed across the whole cleft, with a raw surface looking upward and a mucous surface downward. The after-treatment was that of the ordinary operation, except that as there was no tension in the hard palate, and very little in the soft, the sutures might be left in from three to six weeks. The advantages claimed for this operation were: 1, no tissue has to be pared away; 2, a much larger extent

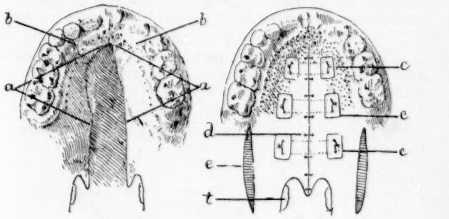


Fig. 4. Fig. 5.

Fillebrown.

of raw surface is brought into closer contact than in the ordinary operation; 3, the tension is small; 4, the upward pressure of the tongue is beneficial, as it presses the lower against the upper bridge; 5, some advantage is gained by using the muco-periosteum of one side in front of the cleft to help in bridging the gap of the hard palate. He says, "I commence my incision at a, a, Fig. 4, and with a hoe-shaped periosteum knife dissected off the tissue from the hard palate to the dotted lines b, b, Fig. 4. After paring the edges of the flaps I inserted silver sutures running above the flaps, and passed them through the palate and through pure silver disks c, c, c, Fig. 5, twisting the ends and making tension which fully approximated the edges. To fully relieve the strain upon the soft palate, and also to allow contraction of the arch, I made the incision e, Fig. 5, from the tuberosity to opposite the under molar. I cut through the mucous membrane with a scalpel and then separated the deeper tissues with a smooth dissector, in order to avoid injuring important vessels. The edges of the cleft now held in close approximation were brought more accurately together by fine silk sutures d, as shown in Fig. 5. I thus avoided the lateral incision in the hard palate, the separating of the tensor muscles, the cutting

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

of the pillars of the fauces, and approximated the tonsils so as to lessen the arch and allow the soft palate to retract to a considerable extent. This increases the length of the flap. If the flap is short near the fauces an incision is made through the mucous membrane near the anterior pillars. Deep wire sutures and head plates are used by the operator to relieve tension on the flaps as well as marginal sutures."

Dr. Truman W. Brophy, Chicago, recommends that the maxillary bones be approximated by twisting silver wire which has been passed through aveolar ridges.

In every operation on congential deformities the preservation of material must be the first consideration. The least amount of tissue must not be severed. In the Davies Colley operation this is carried out throughout.

Fig. 6. Original.

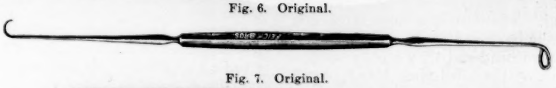
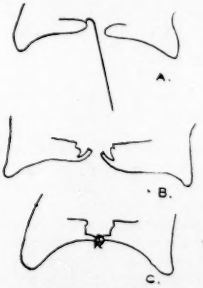


Fig. 7. Original.

Fig. 8. Fillebrown.

In Fillebrown's operation, a skilful step toward economy of tissue is observed. The instrument shown in Fig 8, is a steel hoe with cutting edge on the tip and both sides. It was devised for the purpose of cutting through the soft tissues well up around the margin of the cleft, indeed, far enough to so do that when the flaps are hoed from the bone they reach across the chasm. With the cutting sides it is drawn forward to the anterior angle and backward along the margin of the soft palate, as well as hard—the uvula being very readily split to its tip. With care, a considerable cleft may be closed in this manner, without resorting to bone operation, as Brophy suggests.



Fillebrown operation.

To use a needle without an ordinary needle-holder, requires a very small needle and skilful manipulation, and much time is consumed. The cervix needles, which have the eye near the point, and are bent with a curve at right angles to the staff, answer quite well through the uvula, but are most difficult to handle between the bony cleft. The usual staphylorrhaphy needle is bent with a slight curve at right-angles to the staff, with a very slight curve of the point back toward the handle.

To overcome this difficulty the needle herewith illustrated was devised. (Fig. 6.) It has a curve which brings the point back toward the handle, the curve being just great enough to carry the puncture back sufficiently far from the edge of the flap. The instrument here shown (Fig. 7) is necessary to complete the introduction of the suture skilfully. It has a ring on one end, bent at right-angles to the staff, and with an opening large enough to admit the threaded needle. On the other end is a hook. The needle, after being loaded with the desired suture material, is passed through back of the flap into the nasal cavity. It is then pushed through the flap from the nasal into the oral cavity. The ring end of the instrument containing the hook and ring above described is pressed against the flap to support it and prevent laceration. After the needle and suture passes through the flap, the hook is made to engage the suture on the side of the needle from the staff (Fig. 9, A), and with traction the free end is drawn through into the oral cavity as the needle is pushed back into the nasal cavity (B). The needle, with the thread still in position, is turned around to the opposite side, and passed through the flap as above described (C). As the thread is hooked up on the inside of the needle, the salient end on the same side is let go, and the one on the opposite side held—otherwise the needle would be unthreaded. The hook is again passed around the suture on the outside of the needle as before (D), and as it is drawn through into the oral cavity, the needle is pushed back into the nasal cavity and drawn out between the flaps unthreaded (E). This method permits the introduction of sutures at the extreme anterior angle. It is done quickly and no undue violence is done to the flaps. An important detail is that the hook must be passed around the suture on the side of the needle next the staff, on both sides, or when it is withdrawn, instead of it unthreading itself, it remains threaded and the two ends are through the flaps on the two sides of the cleft (F). The thread may be drawn from the inside of the needle, on both sides, and the steps are just the same.

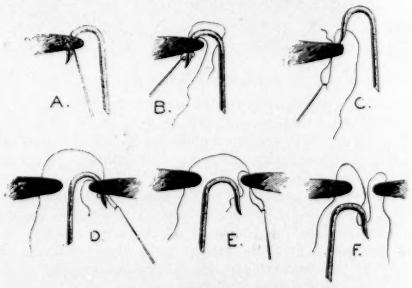


Fig. 9.—Original. Method of entering suture.

A self-retaining mouth gag adds greatly to the convenience ,and greatly assists in expediting the operation. For this purpose, the instrument herewith shown was de-

vised (Fig. 10). It is made as an ordinary gag, except that it has a plate extending from the end of the upper arm of the gag, about the side of the head, above and around the ear. The plate which passes about the side of the head is made of malleable metal, so that it can be accurately adjusted to the side of the head without tilting the mouth gag from the teeth. This is held in position by a head band, which may be an ordinary sterilized gauze bandage. With this simple device the assistant is free to render double service. A self-retaining tongue depressor is attached to the gag, as shown. The

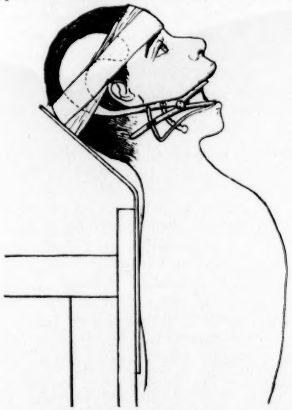


Fig. 10.—Original.

tongue can be thrown up to any desired position by moving the lever, which is pivoted on the lower arm of the gag. The outer lever of the tongue plate is bent along the lower bar of the gag to near the end, where it is turned up at right-angles, this part passing through an opening on the lower arm of the gag. It is secured by a ratchet or thumb-screw, as may be desired. As the gag is closed, the pressure made by the tongue plate is relieved, and as it is opened the tongue is thrown up out of the field of operation.

DISCUSSION.

DR. H. M. VANCE, Louisville, Ky.—I simply rise to indorse the use of this needle. I first knew of it as having been devised by M. F. Coomes of Kentucky, and used since 1882. It is the best staphylorrhaphy needle I know. As the Doctor described, the difficulty is in unthreading it. After introducing the needle with the suture through the flap, if you unthread it wrong, you have to go over your work. The question in my mind about staphylorrhaphy is whether we should do anything with hard-palate clefts; whether the dentist can not do better work where the cleft goes through the hard palate.

DR. A. J. OCHSNER, Chicago—The last speaker has brought out difficulties one encounters in operating on cleft hard palates. I would simply make a short statement about this, because I have operated on a large number—over thirty—of these hard-palate cases, and with results that can not be questioned.

The operation performed is the one described and recommended by Julius Wolff of Berlin; it consists in chiseling off the hard palate along the alveolar process on each side and leaving these flaps raw for a week or so, for the purpose of establishing good circulation. The secret of success consists in making the flaps so loose that it requires no tension to hold them in place. The depth to which you can carry your incision can be measured by passing the little finger beneath the palate. The point Dr. Porter of Harvard Medical College has suggested in the treatment of cleft palate is of great importance, and should be employed in all patients who are old enough. It consists in the use of a rubber plate made by a dentist and fitted far enough back that the tongue can not press against the newly-made palate. It is usually the pressure of the tongue which tears out the stitches, if this occurs. The position used by the author was first described by Rose, about 1850, and should not have been mentioned as the "Murphy position."

There is one important observation about teaching the child to talk normally after this operation, which I made several years ago. A child 5 years of age, who talked only English before the operation, removed to Milwaukee directly after, where the German language was spoken, so that the child learned to speak German, and spoke German only for two years. She learned to speak it without any nasal twang, in fact, her speech was perfectly normal. She then moved to California and began to speak English again, and the English she learned after that was perfectly clear, while the English words she had learned before the operation continued to have the nasal twang. Therefore, I have since frequently made use of this plan: If there is a possibility of the child being taught a different language from the one learned before the operation, this is done; otherwise, the child receives instructions daily from some particular member of the family in the use of the various organs of speech. In this manner most excellent functional results have been obtained.

DR. J. B. BULLITT, Louisville, Ky.—The only one thing I have to say is concerning combining the mouth-gag with the tongue-depressor. I believe that, in practical work, it will be found by most gentlemen that it is not desirable to have this combination used in this way. The fact of the matter is, there is very little necessity for depressing the tongue, as the operation is on the roof of the mouth rather than on the floor, and the tongue comes very little in the way. The depression of the tongue caused by the tongue-depressor embarrasses the respiration of the child and tends to permit more fluid getting into the larynx than there is necessity for. By simply passing a strong ligature through the tongue, the tongue can be absolutely controlled, and the free use of sponges keeps the blood from reaching a high enough level to enable it to enter the glottis.

DR. B. M. RICKETTS, Cincinnati, Ohio—There is one thing here that has not been spoken of, and that is with reference to advancing the jaws. There was a paper written eight or nine years ago by Dr. Wyeth, in which he spoke of advancing the jaws. During November, 1885, I performed that operation at Portsmouth, Ohio, but had not reported it. That was in a case of complete cleft, in a girl 8 or 9 years of age. Of course, the operation spoken of here by Dr. Ochsner has its advantages, and so has the operation of advancing the jaws; but I think the dentist is better prepared and can do better work than any surgeon, where the clefts are of this nature.

DR. S. L. MCCURDY, Pittsburg, Pa.—I just want to reply to Dr. Bullitt. He says that the tongue drops out of the way. This is quite true if you have the head erect, but in the position described, which, according to my notion, is the most perfect position, and blood does not interfere with the operation or pass into the stomach so as to interfere with respiration, the tongue is above and not below.

INFECTIVE SINUS THROMBOSIS.

DETERMINING FACTORS IN ITS SYMPTOMATOLOGY AND DIAGNOSIS.*

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In a casual survey of the contents of medical periodicals in general, and journals of otology in particular, the attention of the reader will be speedily attracted to the prominence alloted the literature of intracranial infective diseases, and careful perusal of such contributions will reveal a gratifying change in the subject-matter as now presented, in striking contrast with similar descriptions of a by no means remote otologic period. The time was, and that within the memory of the youngest of us, when the account was restricted to a brief and deplorably incomplete clinical history, with a doleful and verbose report of autopsy appended, the whole concluding with a mournful dissertation on the utter inadequacy of surgical methods for successful resistance against the inroads of a malady which, with the seeming co-operation of a malignant fate, defied and mocked at every resource of medical science.

*Presented to the Section on Laryngology and Otology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

With the advent of antisepsis, that uncompromising foe to all forms of infection, the theme of these discourses, change, and instead of an unbroken array of obituary notices, distressingly dismal to contemplate, the recital now abounds with details of triumphs of technic and with brilliant operative achievements; the melancholy strain has disappeared and where before every prospect was gloomy, continued success has contributed to buoyant and henceforth unfaltering hope. Other agencies there are which have likewise, but in lesser degree, contributed to the beneficial result, viz., improved surgical methods and a clearer comprehension of the symptomatology. Especially is this true of sinus thrombosis, the more constant and striking phenomena of which this paper aims to present.

The honor of first suggesting the feasibility of opening and cleansing the lateral sinus from disintegrated purulent thrombi, and of ligating the internal jugular as a prophylactic measure against the dissemination of infective particles, belongs to Zaufal,[1] as does also the distinction of being the first operator to undertake the removal of such an accumulation, which he four years later did (1884), in a case in which the sinus wall had become ulcerated, and removing the sigmoid groove he came on the open sinus, out of which he expelled purulent masses by irrigation with an antiseptic solution. He did not re-establish the circulation from either direction nor did he tie the jugular, but he introduced a drainage-tube into the lumen of the sinus. The patient died of metastatic involvement of the lungs. Such were the initial steps from which the operation of sinus thrombosis, as now performed, originated, and on the measures advocated by Zaufal improvements have simply been as to detail, the essentials remaining unaltered. Every phase of this disease is replete with interest, but limited space admits of the consideration of but one chapter —symptomatology.

As regards the technic of operation, the same essential features which characterize all successful cranial surgery apply with equal pertinence to this particular procedure, and while familiarity with the distinctive steps to be employed is imperative, in the interest of a favorable termination, there are two considerations of such paramount importance as to justify a momentary digression for purposes of emphasis. The agencies thus referred to are: 1, control of hemorrhage and proportional reduction of shock; and, 2, rapdity in the performance of the needful operative measures.

In the majority of instances cases of sinus thrombosis come to operation during the second stage of the disease; the patient is, therefore, already in a septic condition of greater or less intensity, with a proportional reduction of physical powers and impaired vital energies; under such unfavorable conditions the opening and cleansing of a large blood-channel like the sigmoid sinus, always an operation of severity, assumes an aspect of greater gravity, and inasmuch as shock under these conditions is largely a matter of hemorrhage, no precaution can be too elaborate to anticipate it, and no attention to detail, however insignificant, can be too studied to ensure a speedy control of this, but where, as sometimes unavoidably happens, the loss of blood is great, owing to the difficulty of removing firmly attached infective particles from the sinus wall, no delay should be tolerated in the performance of intravenous infusion of normal saline solution at a high temperature and in sufficient amount; we possess in this simple agent a most powerful ally, both as a prophylactic against shock, where the vital forces are already materially reduced, as the result of a protracted struggle against sepsis, and as a cardiac stimulant of the first magnitude. Where toward the end of operation the heart action becomes labored and failure imminent, the intravenous infusion speedily alleviates the condition, the flagging energies of the heart are augmented and with the assistance of hypodermic stimulation thenceforth sustained. Time, always an essential factor in operations of gravity, is nowhere entitled to more respect in its flight than during the sinus operation, and while all surgeons should deprecate the practice of operating against time merely as a pretext for the display of physical force and manual dexterity, which affectation is infallibly exhibited at the expense of caution and thoroughness in this grave situation, the operator should sacrifice every detail save cleanliness and thoroughness to the demands of time, a few moments more or less being important elements in a favorable or unfavorable termination.

It is, however, with the symptomatology and diagnosis of sinus thrombosis that this paper chiefly concerns itself, and that these elements may be considered in the order of their logical sequence and a proper estimation of value attributed to them according as they are constant, frequent or uncommon, we will enumerate them in the relative order of frequency which characterizes their appearance in the different stages of this malady.

Symptomatology is par excellence the weak chapter in intracranial infective disease; this is partly due to the faculty of individual observers for attributing a different significance to certain variable groups of symptoms, and to an honest inability to agree on the interpretation of the value of some constant phenomena. The former manifestations may in a given case be insignificant, and the absence or suppression of this may in the next instance prove momentous, wherein the personal equation is entitled to distinguished consideration.

Accuracy of observation and precision of record are slowly but surely eliminating the discrepancies; with the increasing number of zealous observers at home, emulous of rivaling the enviable successes made abroad, an immense impetus is afforded scientific researches, and is bound to be fruitful, and will infallibly result in the accumulation of much useful as well as superfluous material which we trust the touch of some master hand will in the near future convert from a disorderly array of facts into a concrete skeleton on which time and experience will construct a nearly perfect symptomatic organization.

The course of sigmoid sinus thrombosis may be conveniently designated for the purposes of clinical classification as compromising three stages, characterized by local and systemic manifestations; the anatomic appearances of the sinus wall, the pathologic changes in the clot, and the signs of circulatory obstruction may be denominated as *local factors;* while rapid and excessive fluctuations of temperature, frequently repeated rigors, peripheral or central metastases, etc., embrace the essential *systemic symptoms.*

The local and systemic conditions enumerated below constitute the various stages:

First Stage—The presence of a thrombus, parietal or complete—chiefly composed of fibrin, red blood-cells, exfoliated endothelium, leucocytes, and homogeneous protoplasmic cells—not having undergone disintegration and accompanied by slight or moderate pyrexia, rigors being usually insignificant or absent.

Second Stage—The presence of thrombus, parietal or complete, which has undergone disintegration with re-

1 Prog. Mediz. Woch., 1880.

sulting systemic absorption, characterized by frequent rigors and pronounced septicopyemic fluctuations of temperature.

Third Stage—The presence of a thrombus, parietal or complete, which has undergone disintegration with systemic absorbtion, accompanied by rigors, rapid and great fluctuations of temperature, and central or peripheral embolic mestastases, terminating usually in septic pneumonia, enteritis, or meningitis.

First Stage—The diagnosis of sinus thrombosis in the first stage is seldom made preliminary to the operation for mastoiditis, owing to the intermediate character of the symptoms manifested up to that point in the progress of the affection; its detection follows, as a rule, the recognition by the operator of extension of the carious disease through the inner table along the course of the sigmoid groove, or at some point in the immediate vicinity, although there may be, as yet, no perceptible solution in the integrity of the wall, or, on the other hand, there may already be a well-defined opening into the posterior cranial fossa, through which granulations from the eroded dura protrude into the pneumatic spaces of the mastoid; the removal of such granulations with adjoining carious structures uncovers the parietal wall of the sigmoid sinus, and reveals the often entirely unsuspected existence of a thrombus, the patient having exhibited no symptoms in any wise significant of sinus implication. It thus follows that the diagnosis of sinus thrombosis, in the first stage, is, with rare exceptions, consequent on operation for mastoiditis.

In this stage recovery is still possible, although improbable, without operation on the sinus, the infective process occasionally resulting in a constructive inflammation terminating in cicatrical obliteration of the sinus lumen, a conclusion fervently to be desired but very seldom realized. The anticipation of such a favorable outcome is only to be entertained under most exceptional circumstances, namely, when the virulence of the infection is so far attempted as to have nearly expended its energies during the invasion of the vessel-walls and in the production of the resulting clot, and when the residual activity of the pathogenic organisms present in the thrombus is speedily destroyed by the germicidal action of the phagocytes and leucocytes, thus preventing the otherwise certain purulent liquefaction of the thrombus.

The only safeguard against encountering the increased gravity of the second stage is to operate immediately on the recognition of the first stage, and the prognosis under such conditions in skilful hands, and in the absence of any complicating chronic disease of the patient, is exceedingly favorable, while the dangers attendant on sinus thrombosis in the second stage are multiplied both as regards the certainty of general systemic infection and the operative risks as well.

The transitional period between these two stages is usually brief, and its completion is commonly heralded by a sharp rigor.

Second Stage—The presence of a thrombus, parietal or complete, which has undergone disintegration with resulting systemic absorption characterized by *frequent rigors and pronounced septicopyemic fluctuations of temperature.*

The diagnosis of sinus thrombosis is usually dependent on the appearance of symptoms which are not clearly manifested until the second stage of the disease is encountered, when, if the course pursued by the affection is at all typical, there musters in imposing array a sequence of symptoms which are quite irreconcilable, when associated with the suppurative inflammation of the ear, with any ailment other than infective involvement of the sinus. For this reason it happens that the diagnosis is made and surgical aid invoked in the majority of instances, if the medical attendant be alert, in this second stage; the earlier the recognition, the more favorable is the prognosis. But, in the event of the physician in charge misinterpreting these signs, or, as sometimes happens, the patient, although wisely advised, declining to accede to operation, notwithstanding the urgency of the demand for such interference, the characteristic manifestations of the third stage, with almost certain fatality, may confront the operator and confound his skill before the patient or his lay advisers can be forced to comprehend the exigencies of the case.

The general or systemic symptoms of sinus thrombosis in the second stage are essentially those of septicopyemia, and the manifestations are the results of the dissemination through the blood and lymph channels of pathogenic micro-organisms liberated for distribution by disintegration of the thrombus.

With the beginning of the second stage a train of symptoms of increasing gravity manifest themselves in rapid succession. The features of the patient assume a distressed and anxious look with an ashen pallor, as if apprehensive of impending evil. The countenance is frequently suffused with copious, colliquative perspiration, the exhaustive sweating being a significant accompaniment of this stage; there is loss of appetite and constipation, respiration becomes shallow and increased in frequency, the fluctuations in temperature are rapid and excessive, associated with repeated and severe rigors.

Unfortunately, the symptoms which we encounter in a series of cases of sinus thrombosis exhibit an exasperating disregard for all rules of uniformity, and the experience of that practitioner must indeed be comprehensive who does not find his diagnostic skill at times confounded and his wisdom set at naught by the vagaries of the perplexing disease; certain manifestations there are, however, which present themselves with sufficient regularity to be denominated, when taken collectively, "determining factors." These, in their relative order of frequency and importance, we shall emphasize or but briefly notice, considering first the systemic signs since in them are the earliest septic indications manifest.

First in point of importance is the appearance of rigors, which constitute a prominent feature of the second stage of sinus thrombosis; they occur early, are frequently repeated, and as the toxemia increases may even become daily manifestations, accompanied by profuse perspiration. While it is true that chills are the most constant symptom of the onset of infective phlebitis, it is also true that they may be entirely wanting, and 18 such cases are recorded; also 42 in which but a single chill was experienced. Repeated chills may, however, be anticipated, in four-fifths of the cases, and further investigation shows that the mestastatic processes in those instances in which the rigor was not repeated were numerically small, with feeble septic powers. On the other hand, when the chills were frequent and prolonged the subsequent sweating was pronounced and debilitating, and the associated septic process proportionately virulent. The persistent diaphoresis is oftentimes one of the most distressing experiences with which the sufferer has to contend; in certain instances where the infection is severe, sweating continues almost uninterruptedly, during the second stage, even in the presence of temperature sufficiently high to ensure under ordinary conditions a hot and dry skin; this

increasing drain rapidly weakens the individual and hastens the infallible prostration which must ensue unless the manifestation speedily abates. Allen has reported a case in which, with repeated chills, there was no sweating until during the few hours immediately preceding death. Such exceptions to the usual rule in the sequence of symptoms serve chiefly to emphasize their fallibility for purposes of diagnosis. Equally significant inferentially are the fluctuations of temperature. The marked pyrexia is subject to frequent remissions, and the amplitude of the exacerbation is at times very great, although the febrile period may be exceedingly brief, two hours sufficing in certain instances for a variation of 6 F. This very high temperature is significant of the degree of toxemia present in the case, and is a valuable guide to, or one might say warning of, the septic complications to be anticipated. With such fever there could be prophesied, with almost absolute certainty of fulfilment, multiple metastases and a succession of unfavorable developments. Of 95 cases of metastatic sinus thrombosis recorded by Hessler, but 12 exhibited temperatures of 106 F., and of 26 cases which were free from metastases, not one approached this degree.

The pulse and respiration show at first moderate acceleration, becoming exaggerated with the passage of time and increasing toxemia until in fatal cases of pyemic thrombosis the pulse-rate mounts to 180 or becomes so rapid and feeble as to defy computation; the breathing is similarly embarrassed and respirations occur as frequently as 50 per minute. Just the reverse of this occurred in a recent case of mine where there was pronounced alteration in the respiratory rhythm corresponding to no known variety and exhibiting a peculiar spasmodic hitch or jerk on inspiration, which was free from pain; the frequency of respiration was also diminished; the symptoms were apparently occasioned by pressure on the pons of the two greatly distended occipital sinuses.

Vertigo and vomiting are present in a moderate proportion of cases which are uncomplicated, but are much more constant when associated with meningitis, occurring, according to Forselle, in 30 per cent. of such cases; as symptoms of sinus thrombosis they are by no means distinguishing characteristics and the importance attributed to them should not be overestimated. They are present at times only on assuming erect posture, at other times asserting themselves even during recumbency. As an accompaniment of acute infective conditions they appear suddenly, and diminish gradually with the favorable progress of the disease, while their later recurrence is to be regarded as an ominous manifestation.

Consciousness—There is no symptom of sinus thrombosis more subject to variation than consciousness, which in very many cases, particularly with meningitis, remains unimpaired up to the moment of death. Again, there may be speedy loss of it, associated with wild delirium, or the patient may lapse into a somnolent condition, capable of being roused and interrogated with the result of eliciting monosyllabic replies; this state usually precedes coma. Loss of consciousness has been observed in 30 per cent. of uncomplicated cases, and in 50 per cent. of cases complicated with meningitis or brain abscess. In twenty-three cases recorded by Hessler, in which the sinus phlebitis was complicated with meningitis and brain abscess, there was not a single instance of preservation of consciousness throughout the entire course of the attack.

A mild form of delirium does not necessarily imply greatly increased gravity in the case, and may be due to a minute non-infective cerebral embolus, but if prolonged with occasional periods of violence the prognosis is distinctly bad, for coma supervenes, and speedy dissolution ensues. Symptoms analogous to typhoid may appear in this stage if abdominal manifestations become prominent, and are often responsible for fatal errors of diagnosis; this is a melancholy mistake, a frequent repetition of which reiterated warnings in the literature of this subject have, as yet, failed to prevent.

Septic pneumonia and enteritis with albuminuria and affections of the pericardium and pleura, while occasionally encountered in this stage of the disease, are more often absent, and when they appear are usually to be regarded as indications of a rapidly approaching and unfavorable termination.

Simultaneous with these manifestations appear what may be denominated local signs of circulatory embarrassment or obstruction which, with further progress of the affection, become oftentimes very pronounced.

The symptoms originate in engorgement of the veins tributary to the sinuses of the dura mater, or through extension of infective inflammation in neighboring tissues, resulting in phlebitis, or by reason of pressure from the sinus walls distended with clot, or as a result of parietal accumulations pressing on contiguous nerves. Among the earliest and most constant of these may be mentioned hemicrania, occasionally mild in character, and again of unendurable severity, usually radiating from the ear over the corresponding side of the head; this sign is in no sense a distinctive factor, but it is mentioned first as being the only symptom invariably present. Tenderness in the upper portion of the posterior cervical triangle has been a prominent and easily elicited symptom in every case which has thus far come under my observation, and appears a most valuable aid to diagnose. It is dependent on the phlebitis of the deep veins of the neck. The anterior and posterior condyles participating with considerable frequency in inflammatory extension from the sinus, edema of the locality appears in conjunction with tenderness, but as a much less constant manifestation; however, when plainly marked, its significance is unequivocal of obstruction in a great blood-channel, and it usually implies that the thrombus has already extended into the jugular bulb.

The so-called Griesinger's symptom may be described as edema of the occipital region, extending downward and implicating the nape of the neck; it is dependent on phlebitis and obstruction of the mastoid and occipital veins, and should not be confounded with edema of the mastoid region, so commonly encountered in uncomplicated empyema of the process. In connection with this symptom may be mentioned the fact that Bennet has laid stress on the diagnostic value of a distinct point of tenderness over the site of the foramen of exit of the mastoid emissory vein on slight pressure, when the same pressure applied to the mastoid process over its center does not occasion similar pain. No great reliance is to be placed on this observation, for in the personal experience of the writer of this paper this identical point of tenderness has been frequently noted and interpreted to signify the presence of an extradural collection of pus in the cerebellar fossa, usually but not always perisinuous. Jansen long ago called attention to the same symptom as indicative of an epidural collection of pus.

A symptom first appreciated by Gerhardt, and described by him, is elicited by laying the finger with sufficient force, across the course of the external jugular of the affected side, to cause obstructive pressure, when it will be noted that the vessel either exhibits but slight turges-

cence or none at all, while on the healthy side the external jugular, although not unduly prominent, becomes, on the application of similar pressure, engorged to a pronounced degree. This symptom is best elicited by making the pressure as close as possible to the clavicle. A beautiful demonstration of it was furnished by one case of the author's[2], in which the phlebitis of the second stage had already involved the internal jugular vein. Nothing more decidedly confirmatory of Gerhardt's observations could be demanded to carry conviction to the most skeptic.

Another manifestation which has been remarked with varying degrees of frequency recently, by Stirling[3], and by the author[4], is a moderate edema or puffiness of the eyelids of the corresponding side as a result of interference with the cavernous sinus and engorgement of the ophthalmic vein.

Associated with this symptom, intraocular inflammatory changes are observed in about 50 per cent of all cases, usually taking the form of neuroretinitis, and in some instances where there has been extension of a non-infective clot into the cavernous sinus, certain palsies of the ocular muscles have been noted as a result of pressure; while the changes in the fundus of the eye are not specially significant of sinus involvement, their importance should not be underestimated, for they oftentimes lend the needful corroboration to other not sufficiently convincing or weighty evidence; in any event an examination of the fundus oculi should not be neglected.

Percussion—Okukeff claims ability to recognize the presence of a thrombus in the lateral sinus by dullness on percussion of the affected side as compared with the clear tone of the corresponding area of the opposite side. This physical sign must require much skill in its performance, and a specially appreciative ear for its recognition, the ordinary observer not being qualified for such refinement of differentiation in high-pitched sounds; even the phonendoscope with its exaggeration of the percussion note has, in my hands at least, probably from lack of experience, failed to substantiate the claims made for its efficiency.

A symptom which manifests itself late in the second, or which may initiate the third stage of sinus thrombosis, is tenderness along the course of the internal jugular in the neck, with perhaps an appreciable cord-like feeling to the infected vein. Such a symptom would, in conjunction with those already enumerated, be regarded as absolutely pathognomonic of a thrombotic condition of the sinus, with jugular extension.

When in the second stage of sinus thrombosis a fatal termination ensues, the usually assignable causes will be, in the order of their relative frequency, meningitis, pneumonia, enteritis, brain abscess, general sepsis, collapse and operative shock. Other complications may supervene, but as a rule are deferred until, and are characteristic of, the third stage of the malady.

Third Stage—The presence of a thrombus, parietal or complete, which has undergone disintegration with systemic absorption, accompanied by rigors, rapid and great fluctuations of temperature, and *central or peripheral metastases*, terminating in septic pneumonia or enteritis. With the appearance of the distinctive features of this stage of sinus thrombosis, viz: the central or peripheral metastases, septic pneumonia, etc., the hopes of successfully combating the disease rapidly diminish, although so remarkable are the reported cures in this affection consequent on operations undertaken as a last resort that all hope must not be abandoned until the patient is *in extremis*.

The diagnosis at this critical period is to the practiced observer distressingly clear, and a fatal termination is, save as the result of favorable operation, seldom long delayed.

The array of symptoms which appears so formidable in the second stage is now augmented by additional signs of most dire portent; these are the direct result of the dissemination of septic emboli; or, in other words, the new manifestations are due to the distribution of infective material in larger or smaller masses, while the characteristic phenomena of the preceding period are attributable to absorption through the capillaries, of toxins, the product of the morbific action of the pathogenic micro-organisms on the infected tissues, as suggested by Dr. Shepard, or of infinitesimal fragments of septic material calculated to induce general septicopyemia, but inadequate from lack of volume and virulence to establish new and local infective centers, but with the arrest of pyogenic masses in their excursion through the circulation, is instituted a violent and destructive attack against which no structures of the body enjoy immunity and no tissue of any organ or member of the body can offer more than feeble and ineffective resistance; thus there originate the distinctive features of the third stage of sinus thrombosis or of otogenic pyemia, viz., embolic metastases. Should the convalescence from this stage be protracted, or the unavoidable fatality be delayed, there may appear a series of abscesses distributed over the trunk and extremities, as well as the thoracic and abdominal viscera, with the most indiscriminate impartiality. The rapidity with which cellular tissues undergo extensive destruction under the baneful influence of the infective elements thus deposited is astonishing, and can be accounted for only on the basis of diminished vital force incident to general infection, and the reduced activity of the phagocytes and leucocytes. Embolic metastases may appear immediately after disintegration has taken place in a small portion of the clot, or they may not manifest themselves until complete purulent liquefaction has supervened. They sometimes obtain entrance to the circulation through the small tributary veins in the immediate vicinity, and again are admitted through that more direct and dangerous avenue, the internal jugular vein, but whatever their mode of introduction, their evil mission is the same. They are swept along with the blood-stream until they encounter a channel sufficiently narrow to arrest their further progress, at which point they thereupon initiate an infective inflammation.

When in the second stage of sinus thrombosis, either before or after operation, there is a renewal of chills and rapid temperature fluctuations, the formation of metastases is to be apprehended, and a critical inspection of all accessible portions of the body should be exercised, careful scrutiny being directed to the neighborhood of the joints, the fibrous tissue surrounding which is especially prone to attack.

Septic embolic masses find their way into the circulation, as has been already stated, with greatest facility through the medium of the jugular vein, hence the urgency of the operation for ligation of this vessel to prevent further infective distribution. That it frequently fails to realize its full purpose, in no wise discredits the procedure. Numerous instances are reported in which, subsequent to ligation of the internal jugular, metastases have appeared both centrally and peripherally. It is

[2] Knapp's Archives of Otology, Vol. xxviii, No. 1, 1898.
[3] Canada Med. Record, November, 1896.
[4] Knapp's Archives of Otology, November, 1898.

nevertheless no very convincing argument to decline closing the main avenue of entrance to a territory against invaders, because there exist certain other devious paths by which admission may at times be effected.

While it is true that no portion of the human body enjoys immunity against the lodgment of septic particles, it is equally certain that the lungs more often than any other organs become the repository of infective emboli; according to Hessler they are attacked with a frequency one and one-half times greater than the combined other structures of the body, and in inverse ratio to the virulence of the septic agent, and the area of the infarction is the likelihood of a favorable or unfavorable termination greater or less.

In the vast proportion of cases, the infarctions are multiple and both lungs are involved, while the lower lobes participate with greater frequency than the upper lobes or apices. When the pyogenic properties of the deposit are attenuated to a considerable degree, contraction and cicatrization of the obturated region may ensue and healing result, but under less favorable conditions the embolus increases rapidly in size, being augmented by fibrin and plastic lymph, which accumulations speedily undergo disintegration by steps analogous to those which characterize the process in the thrombus, and abscess of the lung results. This may perhaps discharge itself into a bronchus, and the patient recover, but is more liable to open on the surface of the pleura and establish a pyopneumothorax or, in case it does not rupture into the pleural cavity, to give rise to empyema of the pleura; and failing either of these alternatives, the abscess of the lung is prone to become gangrenous; each of these conditions is fraught with imminent peril to the life of the patient, and may practically be regarded as hopeless.

Metastatic abscesses of the abdominal viscera, kidneys, spleen, and liver, occur with relative infrequency, and the collected cases constitute a numerically small addition to the total metastases in the aggregate. The same condition prevails in regard to the brain, the abscesses of which, in connection with sinus thrombosis, which can with certainty be regarded as metastatic, number but nine, as against forty-three which resulted from direct extension of purulent products from the carious bony surroundings.

Peripheral metastases have been recorded in great numbers, and apparently have no selective preferences as regards site, their distribution being universal. Hessler has tabulated 271 such superficial manifestations, and nearly every distinct anatomic structure has been the victim of such a visitation. Not by any means do all the metastatic inflammations result in abscess, a moderate percentage fortunately undergoing constructive metamorphosis and organization. In numerous instances septic enteritis also has run a favorable course, with complete restoration of normal function. Acute septic parenchymatous nephritis was present in a case of mine already reported, and the subsidence of the inflammation left the organ in unimpaired health.

An interesting motive for discussion is offered in the suggestion that metastatic purulent accumulations may themselves serve as foci of general infection; that, in other words, the circulation, having rid itself of the offending agent by depositing it at some remote part of the patient's anatomy, is liable to re-infection at the instigation of the septic products thus locally developed. However engaging such a theory may appear, any views which are expressed on the subject must be made at the present moment, from absence of all confirmatory data, purely conjectural.

The treatment of metastatic abscess is uniform. Wherever accessible, evacuate the purulent contents immediately, pack with gauze, and allow it to granulate.

When death occurs in the third stage of sinus thrombosis, it results in the order of their relative frequency from the following causes: pulmonary and pleural involvement, meningitis, general sepsis, abscess of the brain, and septic enteritis. Other causes have in individual instances been noted, but they represent for the most part, solitary examples, and their total is numerically inconsiderable.

Accepting the foregoing symptoms as embracing the essential manifestations encountered in the course of pyemic sinus thrombosis, a pertinent question will be, which are sufficiently constant to warrant by their presence a diagnosis of the affection? It is highly essential to the successful prosecution of treatment that the condition be recognized if possible before the establishment of those symptoms constituting unquestioned pyemia, that is to say, in the earlier stages.

That any distinctive groups of symptoms can ever be formulated by which the disease in its first stage can with certainty and regularity be recognized and operative aid extended before the establishment of general sepsis, seems scarcely warrantable expectation, for the reason, as already stated, that until septic absorption has begun the manifestations in the majority of instances are such only as characterize uncomplicated mastoid inflammations, and in no wise suggest intracranial complications. It may, therefore, be anticipated that with the exception of those rare cases which are recognized in the performance of an extensive mastoid operation, sinus thrombosis in the first stage will escape detection, the very existence of a clot being unsuspected. Published statistics clearly show that by far the greater proportion, numerically, of the victims of sinus thrombosis are subjected to operation late in the second stage of the affection. It behooves us hence to acquaint ourselves as thoroughly as possible with the distinguishing features of this relatively favorable period, and to neglect no precautions which can in the smallest degree afford protection to the patient against the greatly exaggerated dangers of the third stage, or which may conduce by even a few hours to expedition in the diagnosis of the condition. That the symptomatology of sinus thrombosis, as at present understood, is inadequate when applied with discretion and discernment by intelligent practitioners to establish the diagnosis at an earlier moment than has hitherto been possible, I am fully convinced, and the recapitulation here appended will serve to emphasize those phenomena which may with impartiality be denominated the determining factors, and familiarity with which will insure our patients against the fatality of indecision and hazardous delay. When, therefore, a patient suffering with purulent otorrhea complains of severe hemicrania in connection with sudden increase or recent diminution of discharge, and simultaneously presents a degree of systemic disturbance not conformable with a tympanic or mastoid inflammation, we should be apprehensive of some form of infective intracranial invasion, which suspicion the subsequent appearance of one or more chills with high temperature and undue exhaustion should convert into positive conviction; with the accession now of repeated chills of varying degrees of intensity, from a sensation of chilliness only to a severe and protracted rigor, associated with rapid and excessive fluctuations of temperature, profuse and colliquative perspiration, rapid pulse and respiration and great prostration, there is depicted so faithful a por-

travaal of the salient features of infective sinus thrombosis that the existence of almost any of the local signs, if at all pronounced, would be accepted as absolute confirmation by even the most skeptic and exacting medical attendants. The appearance of the local symptoms may be anticipated in their chronologic order, as follows: tenderness of the superior portion of the posterior cervical triangle, occipital edema (Griesinger), neuroretinitis, tenderness along the course of the internal jugular vein, most marked and earliest elicited close beneath the angle of the jaw. Edema of eyelids (Sterling), turgescence of the external jugular vein of the opposite side, on pressure (Gerhardt), and lastly, a cord-like delineation of the internal jugular of the corresponding side, due to purulent phlebitis extending into the neck. One or several of the foregoing manifestations will be recognizable to a reasonably alert observer, and will supply the requisite corroborating testimony.

The writer offers no apology for the great length at which this paper has dwelt on the symptomatology of sinus thrombosis, for the importance of the subject warrants even more exhaustive consideration of the chapter. A sad commentary on the lack of familiarity with this may be found in the recent melancholy death of one of New York's most promising young surgeons, without diagnosis and without operation.

The relative infrequency with which such conditions were diagnosed but a few years ago contributed to the belief that the lesion was exceedingly rare, but with radical improvements in surgical methods during the last five years the total number of successful and unsuccessful cases reported makes a very respectable aggregate which the unpublished failures, could they be recorded, would appreciably augment. This element of unpublished operative failures bears an important relation to the percentage of favorable prognosis, and it is undoubtedly true not only that all mention of many cases which are recognized and operated on too late and, therefore, unsuccessfully, is suppressed, but also that numbers of patients die with this disease, entirely unsuspected, death being attributed to "obscure head troubles," typhoid fever, and the like. Hence it follows that when we rely on the statistics of published cases for our estimate of the prognosis of sinus thrombosis, we are taking an unwarrantably optimistic view of this fatal malady, the published reports of which are distinctly misleading and in no sense accurately represent the rate of mortality. It is my belief that the percentage of mortality in sinus thrombosis is materially higher than the rate commonly attributed to it, for the reason that the temptation to suppress operative failures is of similar import and equal weight with the inducements to publish operative successes.

The factor chiefly concerned, not only in diminishing statistic mortality, but in increasing the number of actual recoveries as well, will be above all others a more comprehensive acquaintance with the symptomatology of the disease, which will result in early and accurate diagnosis. The names of many brilliant contributors illuminate the literature of sinus thrombosis, certain of whom have invested the subject with an especial and distinctive charm. Zaufal, Horsley, Macewen, Hessler, Kormer, and others worthy, but too numerous to mention, are represented by classic and enduring works and of recent years in the development of symptomatology and technic; the otologists as a class have borne a by no means inconspicuous part.

But to Zaufal, the pioneer, before all others, is due the credit of having initiated the steps which, with modifications as to detail only, we still follow for the relief of sinus thrombosis. His prophetic utterance it was which proclaimed the possibility of preserving life under conditions which had long been regarded as necessarily fatal, and it was his inspired courage which first involved the odium of imputed sacrilege in a futile attempt of presumptuous man to stay the hand of manifest destiny.

But science has many times defied the edicts of both church and state; it recognizes no limitations save those of the intellect, and acknowledges no control save the dictates of humanity. It was when medical science rebelled against the obstacles of conventionality and intolerance and became self-reliant, when it ceased to regard a fatal termination in all intracranial inflammatory diseases as the irrevocable dictum of a kind but inscrutable Providence, that then and not until then, was there instituted a series of surgical triumphs which, with the priceless assistance of that potent ally, antisepsis, resulted in the utter demoralization of infective process and redounded to the everlasting benefit of mankind.

DISCUSSION.

DR. J. H. COULTER, Chicago—I have but a single criticism to offer, and that is that the Doctor has not presented that subject earlier. It is certainly of the greatest importance. It is particularly interesting to me, perhaps for this reason: On last Sunday morning, just after I had gotten ready to start for Columbus, I received a telephone message from a member of this ASSOCIATION asking me to see a case with the possible object of operation. On going to the hospital I found the patient, a little girl 5 years old, who had just been operated on by an oculist. The oculist had done a choroidectomy in order to relieve the tension of the eyeball. I have never observed more intense turgescence of the eyeball than was present in this case. The patient had been treated for seven days for a presumable meningitis. There were apparently no other symptoms present except meningeal ones. The patient had been comatose most of the time, and there had been no indications, to the physician who had been attending her, of a mastoid involvement. On close examination into the history I found there had for some time been a discharge from the ear, a purulent otorrhea, and with as good an examination as I could make under the circumstances, which was rather limited, I found a very certain involvement of the mastoid cells. There was the most intense bulging and tumefaction of the eyelids I have ever seen. Another symptom was the tenderness in the posterior cervical triangle, of which the Doctor speaks in his paper. Pressure at that point was the only thing that would arouse the child in the least.

I advised a mastoid operation as a possible hope, but with an almost hopeless prognosis. I did the operation as quickly as I could, and those looking on avowed that the amount of pus removed would certainly fill one-fourth of the cranial cavity. The hemorrhage after the first free discharge of pus was very free, and further examination revealed the necrotic walls of the lateral sinus.

This patient, even in her comatose state, was constantly and persistently pulling her ear and rubbing the neck, thus plainly indicating the pain location. The author of the paper has, I am convinced, emphasized a most important point in the positive and early diagnosis of this, at all times, serious condition.

DR. J. E. SHEPPARD, Brooklyn, N. Y.—My experience with sinus thrombosis has been limited, and I can only add testimony to what Dr. Whiting has said. In one case I was called in on the third day after the first chill, which came on five days after the inception of suppuration. When I saw the patient she had a temperature between 103 and 104 F., dull pain over the mastoid region, and there was tenderness over the communicating mastoid vein. Acute suppuration was going on. An examination showed a distinct optic neuritis on the affected side. Those were all the symptoms that presented at that time. The operation was done the following day and had to be performed a second time. The operative interference extended finally to the removal of two or three inches of the internal jugular vein and backward toward the torcular, with ultimate recovery.

DR. ANDREW J. TIMBERMAN, Columbus, Ohio—It is very gratifying to all of us to note the increased interest in this class of cases, not only by the specialists, but we now begin to see the dawning light in the general profession. Still, that is as yet too far in the future to hope for much immediate benefit. It is just in the class of cases that has been mentioned that the surgeon

needs all the courage possible. There is almost no limit to which he may not go to obtain the results that he starts out to secure in these cases. We may begin with the idea of a simple mastoid operation and conclude, after a few steps, that we will have to perform a radical mastoid operation, and after we have done that we may not yet be satisfied. I will never forget the feelings I experienced in the clinic of Professor Schwartze, when he began what he himself considered a simple mastoid operation; following this he did the radical one; then going down in the neck he made a ligation of the jugular vein; then going up above again he found an epidural abscess, and then going into the lateral sinus and cutting the external vein, he syringed from the mastoid back into the neck. That was carried on two or three weeks with final success. It was an operation that anybody would be proud of doing, and it shows what we may do if we have the courage of our convictions.

DR. D. M. GREENE, Grand Rapids, Mich.—Dr. Whiting's paper is on a subject to which I have given a great deal of attention, and in which I have been deeply interested. Fortunately I have had but one case of sinus thrombosis, and unfortunately no operation was done on the mastoid or otherwise, but the autopsy revealed a sinus thrombosis. I made a diagnosis of mastoid disease and wanted to do an operation, but at that time, about ten years ago, it was rather a new thing to operate without external swelling, and I was opposed by the physicians in consultation. The patient died as the result, from metastatic abscesses.

I desire to emphasize the following point. Tenderness and swelling along the line of the jugular vein, was not to be felt, and there was no choked disc and no swelling above the eye, none of the signs and symptoms which the Doctor has enumerated as a diagnosis of that condition, except that after the metastatic abscesses had formed in the body, a chain of swelling occurred along the jugular vein.

DR. A. J. TIMBERMAN, Columbus, Ohio.—I would like Dr. Whiting to tell us whether he has ever, in noting the symptomatology of these cases, known of patients who complained of pain in the shoulder-blade.

DR. FRED WHITING, New York City—In reply to the last speaker I must say that I have noticed that symptom once, but only in a fatal case, and the patient also complained of pain in the anterior pectoral region. It was a case which subsequently proved to be a septic pneumonia and a pleuropneumonia in addition at that point. In regard to Dr. Greene's statements that the cord-like condition of the internal jugular vein on the affected side did not appear until the metastatic abscesses had appeared, that is quite common. Probably that patient did not have a thrombus so complete as to entirely close the vessel, but left an opening through which the blood passed downward, and the septic material then was carried along the vein down into the lungs, so you had metastatic abscesses and then the phlebitis became extensive and you then had septic phlebitis extending so you could make out these enlargements. As to the inquiry as to whether the vein itself sometimes becomes so involved in phlebitis as to be unrecognizable in the neck, that is a condition I have not met. Schwartze mentions a case in which he could find no remnant of the vein and had only an abscess cavity in the neck. Knapp also reports a case in which he made an autopsy and endeavored to find the jugular in order to make the operation such as he would and tie off the jugular, and he could find nothing except what he characterized as a minute thread. In that case there had been very extensive cicatrical obliteration. I have never found obliteration of the vein so that it was not easily found. As a rule the vein collapses below the clot, and while it is sometimes somewhat difficult to find, if the man is well acquainted with the anatomy of the part, he can find it quite readily.

DIABETES MELLITUS.*

BY J. M. ALLEN, A.M., M.D., LL.D.
LIBERTY, MO.

Diabetes mellitus is a disease in the beginning of perverted nutrition, caused either by hereditary, functional or organic disease. There is some testimony that it may be communicated from one person to another. It also follows syphilitic lesions near the fourth ventricle of the brain. Later pathologic changes may occur in one or more of the following organs: pancreas, liver, heart, and kidneys, also in the nerve centers of the cardiac and solar plexus. The perversion consists of the entrance in to the blood of an abnormal quantity of saccharine matter. This saccharine matter practically acts as a strong diuretic by producing hyperemia of the kidneys, which results in increased functional action manifested by the passage of large quantities of urine loaded with saccharine matter depuriated from the blood. While this perverted functional action of the kidneys is largely in excess of normal, it must be considered as a conservative force removing from the blood matter which would be injurious to normal tissue metamorphosis.

If the proposition is true that the etiologic factor in this disease is a perversion of nutrition, we should begin its study from two sources: the food matter and the chylopoietic viscera.

It has been abundantly proved that the eating of large quantities of sugar does not necessarily produce this disease, but it may increase the sugar in the urine after the disease is established.

The ultimate of the carbohydrates, and a small portion of the nitrogenous substances, results in the production of saccharine matters in the process of digestion, which, with normal metabolic changes referred to, occur below the pylorus, hence it is unnecessary for us to give attention to the digestive tract above this valve.

The various experiments and pathologic investigations of the part the pancreas might play in the production of this disease is far from being conclusive. The weight of evidence, pro and con, is against the pancreas being an etiologic factor in the production of this disease. The same is true in regard to the liver and the heart, therefore, it would be a work of supererogation for me to bring forward the authorities and reasons on this point, because our text-books and literature abound with them.

It is not so clear to my mind as to the rôle the central and sympathetic nervous systems play in its etiology, because Benard and others have established beyond question that irritation or disease of the fourth ventricle is uniformly followed by sugar in the urine, but this does not follow in the experiments or pathologic changes in any of the other above-named organs. Nor are any of the known diseases of the liver, either functional or organic, ever followed or associated with diabetes. The same is true of the heart. In two postmortems held by me, the pancreas was practically destroyed, and no diabetes was present.

A number of years ago my attention was attracted to the character of food prescribed for diabetic patients by the fact that it excluded all the food digested and assimilated in the duodenum and the other small intestines. And at that time neither physiology nor pathology gave any reason for this course. True, we know that the carbohydrates and saccharine matters of the food were digested and assimilated in this tract of the intestines. The withholding of these, I could easily recognize, gave these organs rest by lessening physiologic functional hyperemia. But the questiton suggested to my mind was: Why *do* this, unless there are organic diseases of the duodenum and jejunum? I believed then, as I do now, that the beneficial effects of withdrawing carbohydrates and saccharine matter from diabetic patients was beneficial *only* because of disease of the duodenum. With these views before me I began a careful examination of every case of diabetes that presented itself, either in my clinic or private practice, for chronic inflammation and ulceration of the duodenum. Since

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

that time I have had twenty-six cases of diabetes that I am sure were preceded by chronic inflammation and ulceration of the duodenum. All of these were carefully and thoroughly examined for disease of the heart, liver and pancreas, but none was found. Seven of these cases I made careful post-mortems of, and found chronic inflammation and ulceration of the duodenum, but no lesion of either pancreas, heart or liver, except in one, where the liver was a little pale in color. In three of them there were lesions near the origin of the pneumogastric nerve which I ascribed to reflex irritation from the duodenum.

In 1878 there was a patient admitted to the Kansas City Hospital, with paralysis of the upper and lower extremities which had existed for five days. He gave the history of having had diabetes for about six months, also that he had had syphilis eighteen months before entrance, which had followed its normal course. He died twelve hours after admittance. Post-mortem examination revealed a clot in the spinal canal near the center of the last cervical and the first dorsal, the result of degeneration of the arterial coats, and gummata in the fourth ventricle of the brain; the other organs of the body were in a healthy condition, including the duodenum.

As to the value of opium, after studying its therapeutic effects, which are, for a time, to arrest secretion, after which, under its use, secretion returns to a normal condition, as is demonstrated in the use of it in large quantities in peritoneal inflammations and opium habituates, I have failed to see why it could possibly be beneficial in diabetes mellitus, except its controlling effect on reflex irritation, which does not require the immense doses that are given. This fact was strongly illustrated in two cases of diabetes mellitus following pachymeningitis, which fell under my care. I used opium in these cases in increasing large doses, yet it had no effect whatever, neither reducing the quantity of the sugar in the urine nor the quantity of the urine secreted.

When it is remembered how abundantly the duodenum is furnished with blood, and how intimately it is connected with the central nervous system by the par vagum, and to the sympathetic through the solar plexus; by the splanchnic with the thoracic centers and filaments from the spinal cord, also with the plexus of Meissner in the mucous membrane, and that of Auerbach between the muscular coats; and how abundantly it is studded with the glands of Lieberkuhn and Brunner, the secretions of which have much to do with the metabolic changes of our food; and coupling this with it being the receptacle for the secretion of the bile and pancreatic fluid, we are forced to recognize that it is an organ of great importance in the digestive and assimilative process, possibly as important as the stomach itself.

By its anatomic location and relation to the stomach, it becomes the receptacle for all the matter that passes through the pylorus, and in those who are suffering from either functional or organic disease of the stomach much of this matter is highly irritating. Its extensive and various connections make it the great reflex center of the alimentary canal. This is demonstrated by the fact that nearly all severe burns produce inflammation and ulceration of this organ. This organ is also exposed to the inflammatory diseases of the intestinal canal, particularly dysentery, typhoid fever, and occasionally the exanthematous diseases.

I hope I shall be excused for making this digression, because of the scarcity of medical literature on the subject, and it enables me to bring before you the importance of the functions of this organ, and the frequency with which it is exposed to disease.

It is fair to assume that chronic inflammation and ulceration of this organ would materially affect the secretion of its glands, and possibly its accessories, thereby arresting those metabolic changes in our food whence the saccharine matter is derived, and rendering them unfit to be converted into glycogen, so that by natural selection they are taken up by the absorbents and veins and carried to the kidneys to be depurated by them from the blood.

As all the cases of diabetes that have fallen under my care have been more or less of a neuropathic diathesis, with high reflex sensibilities, and recognizing the duodenum as the great center of reflexes in the alimentary canal, the question has often presented itself to my mind as between the explanation given above in regard to the metabolic changes in the food as an etiologic factor and peripheral irritation, producing reflex irritation, affecting the nutrition of the nerve-center that presides over the conversion of starchy matter into saccharine matter, and as to which is the etiologic factor in diabetes.

I am free to admit that the tendency of my mind, taking into consideration the origin and distribution of the par vagum and the connection of the duodenum with the sympathetic nervous centers, is to conclude that peripheral irritation is the more probable factor, because Brown-Séquard and others have well established that reflex irritation is sufficient to arrest and prevent secretion; and, if continued long enough, to produce structural change of tissue.

Basing my treatment on the philosophy of etiology and pathology as given, it is as follows:

1. Allow the patient to eat only such foods as can be digested by the stomach, giving the duodenum rest, and thereby preventing physiologic hyperemia. This continued for a time will reduce the hyperemia to a point so small and feeble as not to be a source of irritation to the inflamed structures.

2. Use intestinal germicides, the value of which, in my experience, is in the order given: creosote, sulphocarbolates of zinc and soda, hyposulphite of soda, eucalyptol, menthol, oil of cinnamon and sulphid of calcium, salol, betanapthol, carbonate of guaiacol. I have found the pulvis hydrastis canadensis, combined with salol, an efficient stimulant and alterative to the mucous membrane. To control reflex irritation, I use 1-15—1-10 gr. of morphin three times daily, or aqua chloroformi, a dessertspoonful three times daily.

All of these cases suffer more or less with anemia of the nerve centers: To prevent this I give 1-60—1-40 gr. strychnin nitrate three times a day, or an equivalent amount of nux vomica. As a tonic I use either the bitter tonics or the phosphates of lime and soda, or the wine of the phosphoglycerate of lime (Chapteau). The ferruginous preparations and the cod-liver oils should be excluded.

Many cases of diabetes have hyperacidity and hypersecretion caused by reflex irritation originating in the duodenum, so great that when the chyme passes through the pylorus it can not be rendered sufficiently alkaline by the secretions in the duodenum to undergo normal metabolism.

This condition is always associated with an increased amount of sugar in the urine. To render the chyme less acid we give from 20-30 grs. of potassium bicarbonate, largely diluted in water, just after eating. Its ben-

eficial effects are at once manifested by a decreased amount of sugar in the urine and in the amount of urine secreted; it also makes it far less irritating to the duodenum, thereby decreasing the reflex trouble. The salicylate of soda is recommended for the same purpose, but in my hands the results have not been so desirable; the only advantage it could have over potassium bicarbonate would be its slight germicidal properties; but this effect is not needed, for the reason that I am giving better germicides.

Another combination of remedies which I have recently used with apparent benefit is as follows:

℞. Creosote ..... gtts. 1/3
Tinct. nucis vomicæ ..... gtts. x
Saw palmetto ..... ʒi
M.

In the saw palmetto we have something of a tonic as well as a stimulant to the mucous membrane, thereby lessening retrograde metamorphosis of this tissue.

As a matter of course the environments of the patient should be hygienic, with plenty of fresh air, also baths and massage of the skin every other day, and no mental nor physical work.

A large majority of the cases of diabetes which I have treated have been in my clinic of the University Medical College, Kansas City, Mo. Only three of these remained with me ten or twelve months, when they were discharged cured. Two cases recovered in my private practice. The remaining number I was unable to follow, so I can not give results. I think I do not say too much when I say all of them were benefited, as indicated by a decrease in the amount of secretion of urine and the amount of sugar present.

Excluding heredity as a factor, and beginning early before pathologic changes have occurred, I should feel hopeful of favorable results.

CLINICAL NOTES ON DIGITOXIN.*

BY JOHN P. SAWYER, M.D.
CLEVELAND, OHIO.

Among the few really indispensable drugs which we have, digitalis would be placed in the very front rank by most medical men, and this is true in spite of the fact that its use is attended by certain disadvantages, and that these disadvantages are not regularly to be estimated, owing to the complex nature of the constituents of the drug, and the varying proportions in which these are present in the crude leaves. The various alkaloids and glucosids, obtained from the crude drug, have not been widely known because of technical difficulties in preparation, and have not made their way into general favor. Moreover, the exceeding smallness of the dose, and the considerable risk of cumulative effect have added to the distrust with which most practitioners have looked on these drugs. But the evident gain from the use of a definite active principle is so great that determined efforts have been continued through years, and there is now a considerable mass of cumulative evidence very favorable to the use notably of digitoxin. And I bring it to your notice here because I have found in an increasingly free use of the drug that it is more speedy, more certain than digitalis; that it is efficient in most cases where digitalis is at all likely to succeed—and this may be well inferred from the fact that digitoxin confers on the leaves a large part of their ordinary effectiveness—and, moreover, in a number of cases I have found digitoxin efficient to a remarkable degree, when digitalis had failed utterly in an ordinary method of administration, and when also a long list of other allied heart tonics had been employed successfully. In fact, I am now using digitoxin in a majority of cases under my observation which present any indication for the use of digitalis.

I will especially refer to an article by Wenzel[1], in which he reports the use of digitoxin under Unverricht's directions in the Madgeburg hospital. This is the more noticeable as within a few weeks Unverricht has stated that he has in these intervening years made a continually increasing use of digitoxin, until now it has nearly displaced digitalis.

The remedy has been administered in solution with glycerin, alcohol, chloroform diluted in water. It has been made use of hypodermically, and has largely been given per rectum. Many writers refer to its irritating properties on the stomach, but this is true particularly of earlier articles, and as the dose has been diminished, there are apparently fewer reports of unpleasant results on the digestive canal. I have as yet to see in the small dose I employ the first symptom of irritation in the stomach, and I have not found it necessary to resort to any other means of medication than by capsules or tablets given by the mouth.

The desirable effect sought to be gained by the administration of digitalis is an increase of arterial pressure, usually with diminution of pulse-rate; while on the other hand we seek to avoid continuance of high arterial pressure with quickening rate, heightened blood pressure with irregularity, and as the extreme the rapid sinking of blood pressure with sudden cessation of heart action, and death. The great weight of experience is that digitoxin accomplishes this first desirable indication within from twelve to twenty-four hours, and the result once accomplished is maintained for a surprisingly long period of time.

My own observations coincide entirely with these statements, and I have a sphygmogram taken from a case of a woman 30 years of age, with a rapid pulse of low tension, slightly irregular, with heart apex in the mammary line in the fifth interspace, with a systolic murmur heard at the apex and toward the base, with accentuation of the pulmonary second sound, complaining of shortness of breath on slight exertion, complaining of a dry hacking cough after exertion, and particularly annoyed by it on lying down at night—so much so that she was unable to sleep for several hours. She had also noticed a considerable diminution in the amount of urine. I directed one-eighth of a milligram, about 1/500 grain, of digitoxin three times a day until the pulse was less than 80, and directed her to report in forty-eight hours. She took two doses the first day, and had very little cough at night; one dose the following morning, and then finding her pulse less than 80, took no more until I had seen her again. I told her to take one dose each evening and report again in forty-eight hours, when I took a second tracing, which shows a decidedly improved condition of arterial pressure, pulse wave far better sustained, and the rate reduced to normal. The patient took but three or four doses, and has been entirely relieved of the symptoms of insufficiency with which she came, and has noticed a marked increase in the quantity of urine.

This leads me to the statement that I have repeatedly noted the favorable diuretic effect in digitoxin. What I have seen in this one case, I have seen in more than a

*Presented to the Section on State Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

[1] Centralbl. f. Inn. Med., 1885.

score like it. In permanence and pleasantness of effect, I have seen nothing to compare with it, and in these small doses I have seen no irritation of the stomach.

As to its effect in cases where other remedies have failed, I will briefly state the essential points in two cases, each of which I had seen four or five years before, and in which I had made the diagnosis respectively of aortic insufficiency and of mitral insufficiency. A gentleman of large frame, 52 years of age, presented himself for examination, and I found the apex of the heart in the sixth interspace in the mammary line, the apex-beat forcible, heaving, pulse 80, water-hammer pulse, capillary pulse, arteries somewhat thickened. On auscultation a soft murmur practically replaced the second sound at the aortic cartilage and was transmitted distinctly down the sternum, and into the carotids; urine normal. Patient was occasionally under my observation as consultant, and last spring was in an advanced state of cardiac insufficiency with increasing vascular changes and secondary disturbances, with albumin, hyaline and granular casts. The various heart tonics were tried, including digitalis in its preparation of tincture, infusion, extract, dried leaves, convallaria, nitroglycerin, adonis, strychnia, all being used at various times, according to the indications presented by the special condition of the patient. From none of the digitalis group were any results obtained comparable to those gained from the digitoxin, and this in a patient in time of secondary disturbances, quite marked as regards the intestinal canal, and without the frequently mentioned irritating action of digitoxin. And in this case, the favorable effect on the circulation seemed to be very efficient in quieting the stomach. The patient died after the establishment of thrombosis in the popliteal arteries. The post-mortem confirmed the diagnosis of aortic insufficiency.

Another case is that of a young woman, 23 years of age, whom I saw five years ago, and not again as a patient until I was called in consultation, finding her in an extreme cardiac insufficiency, propped up in bed, unable to lie down, with marked edema and ascites, passive congestion of the kidney, and marked secondary disturbance in the intestinal tract, vomiting, flatulence, and diarrhea—all contributing to plague the patient. I found that a number of gentlemen had seen the case in consultation, and I could mention no other cardiac tonic which had not been tried out in competent hands, and the attending physician confessed his want of faith in the trial of digitoxin. But nevertheless the prescription was given, and the effect was astonishingly prompt and helpful. The shortness of breath was quickly relieved, the passive congestion of the kidney improved very markedly, and with the betterment sleep and rest was much improved, and the stomach disturbance considerably lessened. A test of the stomach contents obtained at the next vomiting showed an excessive amount of hydrochloric acid, and the prescription of a simple alkali was attended with extremely helpful results. With the efficiency of the digitoxin, and the relief obtained from the use of the alkali the patient made a recovery from what was truly a desperate condition. To the digitoxin belongs a large part of the credit in this case, and the establishment of compensation was very decidedly helped by the occasional use of a few doses of the drug given in this case, as in the preceding one, in ¼ milligram doses.

These cases are those of primary heart lesion. Another extreme case was that of a man 40 years of age, with chronic parenchymatous nephritis, in whom the secondary cardio-vascular changes became very prominent, the cardiac insufficiency at last so extreme that death seemed immediately impending from that cause. In this case also the usual cardiac tonics failed to check the failure of heart muscle, and the very able attending physician was more prone to discuss the probable post-mortem findings than to consider anything likely to relieve the desperate condition. Digitoxin given in ¼ milligram doses three times a day was efficient, and a fairly established compensation was obtained for a time, the patient dying six months afterward from uremia, and not from the cardiac insufficiency.

These cases could be multiplied were it desirable, but I present them to illustrate the observations I have made of digitoxin, leading me to summarize its advantages as prompter than digitalis; in sufficiently small doses no more irritating than digitalis; efficient as a diuretic; and so frequently successful when digitalis and other allied preparations have failed, that it would seem no case should be despaired of until the efficiency of this active principle has been tried, and this promptly efficient action not seen only in a limited class of cases, but throughout nearly the whole range of the indications for digitalis in chronic disease. My experience with its use in acute disease is not sufficient to warrant more than favorable notice, and I have therefore not reported the relatively few instances in which I have used it in this class of cases.

THERAPEUTICS OF PNEUMONIA.*

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In asking your atttention to the "Therapeutics of Pneumonia," I am aware that I am traveling over a well-worn way; the mass of literature on the subject is simply appalling. But I have the temerity to ask your attention to the subject again, for I believe that the mortality of the disease is so great under ordinary treatment that the burden is on us continually to review our treatment until the statistics of the disease show some reason for our connection with it. I do not propose to weary you with a discussion of the various pathologic conditions that are somewhat loosely described by the general term pneumonia, but wish to be understood as discussing the acute lobar variety. The etiology of the disease is fairly well established. A pathogenic germ described by Fraenkel is said to be present in over 90 per cent. of all cases, although the same organism has been found in pleuritis, pericarditis and even meningitis, and is present in the nasal and salivary secretions of healthy people. The pneumococcus of Friedlander and the streptococci of suppuration are not infrequently found. We are, then, justified in classing pneumonia as an infectious inflammation, the infection being quite often of a mixed type. As a predisposing cause, exposure to cold is usually considered the most important, but I am inclined to think a lowering of normal resisting power, whether from exposure to cold, overexertion or other cause, a fairer statement. It is quite commonly considered a disease of the winter months, but I think this no more true of pneumonia than of other infectious diseases. The eighth and ninth U. S. census reports show the disease to be more prevalent below than above the thirty-ninth

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

parallel, which might be taken as proof that extreme cold weather is not a predisposing cause. I am of the opinion, however, that the excess in per cent. of cases, and also in per cent. of mortality in the Southern States is due to the large percentage of negroes in that section, who, from poor hygienic surroundings and lack of intelligent care, are easy victims to the disease.

My contention then is that the germ or germs that are the specific cause of the disease are fruitful in proper soil at any season of the year and in any latitude. Having then an inflammation due to a specific cause, the modern trend of therapeutics will lead us to look hopefully for a specific treatment; and, indeed, results have been already attained by investigators like Washbourn[1], Pane[2], Rienzi[3], and others that sustain this view. As far as I am informed, however, we are not at the present time in a condition to avail ourselves of a specific so well established as to warrant its general use, and are compelled to follow a line of expectant treatment. As a result of this treatment Drs. Townshend and Coolidge, who worked up the records of the Massachusetts General Hospital from 1822 to 1889, and who characterized the treatment before 1850 as heroic, from 1850 to 1860 as transitional, and since that time as expectant, rather hopelessly conclude that neither the duration of the disease nor its convalescence is affected by the treatment. This, let me say, parenthetically, is in line with that therapeutic nihilism that has been for the last twenty years so prevalent. Of the dietary of the disease I have only to say, it should be no different from that of other acute diseases. Of the hygienic surroundings the same may be said. I would, however, lay special stress on the importance of pure air, i. e., air free from infectious germs. Beverly Robinson[4] recommends that some disinfectant vaporized by boiling water be provided, both for the benefit of the patient and the protection of the attendants. How valuable such a measure may be I shall leave the bacteriologists to decide. Antiseptic mouth washes and gargles, or better, sprays, are important. Regular forcible inspiration, I consider extremely useful at such intervals and during such time as each individual case will admit. Local applications while supported by staggering statistical tables have not in my experience proved of especial value. A recent article by Prof. May[5] especially commends a liberal use of ice, topically, while Kolipinski[6] advises hot water bags to maintain a temperature of 110 F. My own experience with these methods is so limited as to render an opinion worthless. The agents that have proved most useful in my hands have been acetanilid, some derivative of opium, strychnin, nitroglycerin, alcohol, oxygen and digitalis: The acetanilid in the initial stage where nervous disturbance and pain are present has seemed to me an excellent agent; the opiate for pain not amenable to acetanilid, and for the relief of a distressing cough; for the former sulphate of morphin, for the latter codein or, what is probably better, heroin; the strychnin for the sudden failure of heart power that so often proves fatal, and in this connection let me say that 1-20 gr. is none too much for a crisis, to be repeated in from two to four hours as indicated; the nitroglycerin for its well-known effects on arterial tension; the alcohol as an aid to strychnin—champagne preferably; the oxygen, when deficient oxygenation is evident, and the digitalis from the time a diagnosis is made until convalescence is established. Some years since Petresco[7] urged on the profession the use of this drug in massive doses and supported his contention with favorable statistics, but the treatment did not stand the test of experience, mainly for two reasons: in the dose recommended the drug in many cases interfered with nutrition by upsetting the stomach, and its slow action made it uncertain whether its full physiologic effect could be obtained in time to ward off disaster. To those who have made a special study of the physiologic action of digitalis, and especially to those who have noted the actual increase in cardiac tissue resulting from its use, a result very strikingly brought out by some experiments by Prof. Hare[8], it will not seem extravagant to say that we need from two to three days to establish a full physiologic action. While we may expect a marked increase in the force of systole, a rise in arterial tension, and a lengthened interval between diastole and systole in from twelve to twenty-four hours, we can not expect marked trophic changes so soon. While theoretically we might look for an initial change in this direction early in the use of the drug, an appreciable effect is probably not obtained under two or three days. I hope soon to see a series of experiments demonstrating this point. However, the theory that digitalis will increase cardiac tissue is too well established to admit of successful controversy.

My method of administering the drug is to give small doses at frequent intervals, being guided in amount largely by the tolerance of the stomach. A pill or tablet is less likely to disturb digestion than a liquid preparation.

To summarize: While the other agents mentioned are to be used as symptoms indicate and are of undoubted value, I am firmly convinced that the routine use of digitalis as I have suggested will not only greatly lessen the mortality of the disease, but will render the use of most of the other agents mentioned unnecessary in a majority of cases.

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* And I can well believe that "jam satis" will be the mental if not the verbal greeting such a title will invoke.

VALUE OF THE TUBERCULIN TEST IN THE DIAGNOSIS OF TUBERCULOSIS.*

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So long as the tuberculin test has many strong opponents as well as ardent advocates, future evidence from the experience of those who are using it is of value in deciding its position as a method of diagnosis. Those who oppose its use for this purpose, take the ground that it is dangerous, either by rendering more active already existing disease which is in a more or less quiescent state, or by infecting the general system, or in both of these ways; or, on the other hand, that it is unreliable by giving reactions in other diseases, notably syphilis, and by not reacting in certain cases of tuberculosis, cases demonstrated to be such by other methods of diagnosis.

Its chief value, and I believe it is valuable, though not infallible, is in the assistance it renders us in detecting early and doubtful cases impossible of detection by

* Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

other diagnostic methods. It is superfluous when the diagnosis can be established by the ordinary means.

The X-ray examination, in the hands of an expert, seems to be a more accurate and delicate test of early lung disease than even tuberculin, and without the fear of possible injury as with the latter, but the required technic and experience, and the expensive apparatus limits its use to the few. The tuberculin test can be used by anyone. The importance of the earliest possible diagnosis of pulmonary tuberculosis in reference to prognosis and treatment is of incalculable importance. Both auscultation and percussion and the sputum examination fail to do this in many cases, more, perhaps, than we are aware. If we wait until tubercle bacilli are found in the sputum, the case, in the writer's opinion, is one or more steps beyond the earliest stage. It is unsafe and in some cases entails a fatal delay to wait for this proof. Before a definite diagnosis is made, one is naturally disinclined, and lacks the requisite authority, to institute a vigorous plan of treatment in a mere suspect. Certainty of facts renders one resolute and energetic in action.

The problem before us then is, how far will tuberculin aid us in reaching this much desired goal of early diagnosis? Will it, in the large majority of cases, give a recognizable reaction when tuberculosis is present, and fail to do so when the disease does not exist? In doing this will it injure the patient, or in any way lessen his chances for recovery? Further, what is the amount to be used in order to accomplish the one object and avoid the other?

Some at least of the opponents, I fancy, have been prejudiced by the dire results following the use of enormous doses of tuberculin at the time of its discovery, and their adverse opinion seems rather to be due to this vivid and unfortunate experience, than to investigations with the small doses now used. At all events, the advocates of the test seem more generally to have produced their evidence. The question of injurious results from the test is a difficult, if not an impossible, one to finally and fully answer. Take, for instance, a case, which by the usual methods of examination gives no evidence of tubercular infection: it reacts to tuberculin, and soon after the evidence of active tubercular trouble is manifest. Did this activity exist, undiscovered, before the test, or was it accelerated by it? The almost, if not quite, universal conclusion of the many patient users of the tuberculin test is that they have not encountered injurious results, when used in small doses, and my own experience accords therewith. Such evidence comes from Krause, Gaffie, von Jaksch, Grasset, and Wedel, Springthorpe, M. Beck, and many others in Europe; and from Trudeau, Whittaker, White, F. H. Williams, Klebs, R. C. Cabot, and others in this country. Assuming then, as the weight of evidence seems to prove, that when used in small doses, generally not over ten milligrams, there is no permanent injurious effect, we come to the second half of the question: Can we depend on the results? In the large majority of cases I believe we can, but not in every case. If we shall in the future be able to determine some method of more exact dosage, proportioning, perhaps, the dose to the weight of the individual, or discovering some other constant ratio between the dose and the individual, we may find the test to be true in every case.

In common with others, I have had cases of proved pulmonary tuberculosis which did not react, at least so far as the general reaction was concerned, and, on the contrary, it has happened to me to obtain a more or less complete general reaction when I felt rather sure that no tuberculosis existed. It seems to be not unlikely that beyond a certain dose maximum to the individual in question, a general reaction may occur in a healthy person, which means that he is simply poisoned by the toxins of the tuberculin. I have also obtained reactions in syphilis.

That well-established pulmonary tuberculosis, where tubercle bacilli exist in the sputum, sometimes fails to react, at least in the general reaction, as has happened more than once in my experience, is probably either due to the insufficiency of the dose in those particular cases, or to the fact that White points out: that the general reaction is slight and the local reaction marked in advanced cases, and I overlooked or did not seek for the local reaction. However, the tuberculin test is not needed for well-marked cases; they are readily and absolutely detected otherwise. It is in the early cases, as I have said, that tuberculin has its great value, and where I believe the test is the most delicate, and the results elicited by it can be depended on.

My observations have extended over 111 cases, originally undertaken in an ambulatory clinic to see if I could arrive at an approximate conclusion as to the proportion of cases of cervical adenitis which were tuberculous. While making these investigations, I also embraced the opportunity to test all cases which came to the clinic, which, for any reason, suggested tuberculosis, as well as several cases of syphilis and other general cases which gave no evidence, clinical or otherwise, of tuberculosis. My observations of last year were published in the *Medical News* of July 9, 1898; the tables of results as there given, as well as those of this year, I append to this communication. In the total number of 56 cases of cervical adenitis taken without selection, there were 33 reactions, 6 slight reactions, and 2 doubtful ones. Throwing out the slight and doubtful ones, we have 58.8 per cent.; including them 73.2 per cent.; or an average of 66 per cent., so that this would indicate the proportion of cases of cervical adenitis that were tuberculous so far as an inference can be drawn from this number of cases (55), and dependence can be placed on the tuberculin test, but a larger number of cases, and other methods of investigation must corroborate or disprove these deductions. It seems not unlikely, however, that this is not far from the truth, for Volland, from his investigations, makes the proportion 68 per cent., and Dr. F. C. Moore[1], out of 28 cases of chronic enlargement of the glands, mostly of the neck, which had to be operated on for various reasons, found that 73 per cent. were tuberculous. In 8 cases of syphilis and 1 doubtful one, there were four reactions. One of these cases was injected for cervical adenitis and reacted moderately after 5 mg., and markedly after 10 mg. A few days later she developed evidence of secondary syphilis. Another case was injected for a chronic enlargement of the metacarpal bones of the first and second fingers of the left hand, of three months' duration. The clinical diagnosis made was either tuberculosis or syphilis; 5 mg. gave a marked reaction, leaving the diagnosis, however, still in doubt, as either disease may have given the reaction.

There does not appear to be any doubt then that a certain proportion of syphilitic cases react. This fact, however, would rarely interfere with the test in its most useful, nay principal, application in suspected early cases of tuberculosis. In seven cases of more or less advanced pulmonary tuberculosis containing tubercle bacilli in the sputum, three gave no general reaction

[1] London Lancet, Sept. 17, 1898, p. 734.

after 10 to 12 mg., and one none after 5 mg. Unfortunately the local conditions after the test were not noted.

The only deduction that can be drawn from these few cases is that pulmonary tuberculosis, when more or less advanced, will not always give a general reaction from 5, 10 or 12 mg. of tuberculin; but here again let me repeat that the test is the most useful in the early cases where it is the most sure, the general reaction being marked, and the local slight. In the other general cases the results corroborated the clinical diagnosis in a majority of instances. Whether any reactions occurred without the existence of tuberculosis, one can only conjecture, but it is rather surprising that an enlarged thyroid gland or atrophic rhinitis and pharyngitis sicca should give a reaction without other evidence of tuberculosis.

In no case did I have any serious event as the immediate result of the injection or as a later consequence. The clinic being an ambulatory one, the statement of the patient as to his sensations was principally relied on as to whether or not a reaction had occurred, that is, the general reaction was depended on. If, from six to twenty-four hours after the injection, the patients complained of excessive weakness, sensations of heat and cold, nausea, anorexia, pain in the back and limbs, severe headache, sweating, sleeplessness, summed up by them as feeling "very sick," "awful bad," or "miserable," and they appeared at the clinic the next morning with coated tongue, rather a rapid, weak pulse, more or less rise of temperature—if the other symptoms were marked, not much reliance was placed on the temperature at that time—looking as if they had just arisen from a serious illness, a reaction was considered to have occurred. The cases were generally afebrile at the time of the injection.

Objection may be urged as to the accuracy of these tests when the patient could not be kept constantly under observation, as in a hospital ward, but anyone who has listened to the graphic recital of the reaction symptoms, and seen the striking evidence of weakness and depression exhibited by the patient, would be convinced, I am sure, that a general reaction had occurred. Moreover, since making my first set of tests a year ago, Dr. R. C. Cabot, at the out-patient department of the Massachusetts General Hospital, has followed a similar plan in tuberculin and other injection tests, and has also satisfied himself that accuracy in results can be attained in an out-patient clinic[2].

As a matter of convenience I gave the injection in the forearm or upper arm, generally subcutaneously. The site of injection was almost invariably swollen and tender and painful for a few days, but I never had an abscess. I would by all means advise deep injections in the muscles, either of the back or limbs, preferably the former. Asepsis was practiced in the procedure, and a common glass or metal subcutaneous syringe was used. Either Koch's original tuberculin, or that made in the Adirondack Cottage Sanatorium Laboratory, kindly furnished by Dr. Trudeau, was used. As the latter seemed, in my experience, to be less concentrated than the former, judging from results, I finally confined myself to Koch's, previous experience with which had taught me what to expect from certain doses. One is likely to be misled, I think, if he indiscriminately uses tuberculin of different strengths, and, therefore, he can judge of his results better if he sticks to one preparation which does not vary in strength. I diluted the Koch's tuberculin to a 1 per cent. solution, using for the purpose either distilled water or a normal salt solution. By adding a few drops of carbolic acid I was enabled to keep the solution clear much longer than without it. With a pipette graduated into tenths and one-hundredths of a c.c., milligrams could be easily measured.

There is much diversity of opinion as to the dose, among authorities. Some assert that they obtain satisfactory results with very small doses, as for instance, Grasset with .2 to .5 mg. for an adult, and Gaffie, .05 mg. for infants. The majority, however, use larger doses, from .5 to 10 mg., and occasionally 20 mg. A. C. Klebs regards 20 mg. as the "maximum dose which can be injected safely," but he would not begin the test with this dose. It is not unlikely that this difference of opinion as to the dose is largely due to the difference in the preparations. I have never used over 12 mg. of Koch's tuberculin, generally from 5 to 10 mg. for an adult, and from .5 to 3 mg. for children.

I would summarize my conclusions as follows:

1. The tuberculin test indicates early tuberculosis, by a general reaction before it can be detected by other methods, except the X-ray, in the large majority of cases, with a dose of from 5 to 10 mg. of Koch's original tuberculin.

2. No injurious results occur from the use of tuberculin in these doses.

3. Proved tuberculosis in a more or less advanced stage may fail to give a general reaction from doses of from 10 to 12 mg.

4. Syphilis gives a reaction in an undetermined proportion of cases.

5. There is a dose, undetermined, at which a non-tuberculous person may react or simulate a reaction.

6. The reaction may be deferred from six to twenty-four hours.

As rules to be observed in making the test:

1. Always use the same tuberculin and of a standard strength.

2. Use aseptic precautions in giving the injection.

3. Make the injection deep into the muscles of the back, arm, or leg.

4. Keep a two, three, or four-hourly chart of the temperature if possible, beginning twenty-four hours before the injection.

5. Allow several days to elapse before repeating the test.

6. In early cases depend on the general reaction; in late cases, if the general reaction fails, carefully look for the local.

[2] Cabot, R. C.: Substitutes for Tuberculin in Diagnoses. Jour. Boston Soc. of Med. Sci., January, 1899.

Local Treatment of Rheumatic Joints.

The swelling of the synovial membranes and ligaments in retarded convalescence or chronic cases taxes the patience of both the sick and the physician. Vesicatories, kept on for half an hour, and frequently repeated; the wet bandage or pack snugly applied, so as to compress gently; compression by bandages or collodion; gentle massage; the galvanic current daily applied, find their indications in many and various cases. Iodin will come in for its share of usefulness. Besides the internal administration of the iodids—potassium or sodium, or both combined, in doses of 5 to 20 grains daily—the external application will be found beneficial. The official ointment will act through the gentle handling and kneading necessitated by its use. Solutions of potassium iodid in glycerin will act better, but are inferior to the lanolin ointment. Superior to all, however, is the application, twice daily, of one part of iodoform in from 8 to 15 of collodion or flexible collodion. It is brushed over the swollen part copiously and allowed to dry while the limb is kept absolutely at rest for ten minutes. Only such scales as get detached spontaneously may be removed; otherwise the next application is made on top of the preceding ones. Very old cases, with chronic effusion into the joint, require aspiration and washing out.—*Jacobi, in "Therapeutics of Infancy and Childhood."*

REPORT OF CASES OF PULMONARY TUBERCULOSIS, TREATED WITH INTRAPLEURAL INJECTIONS OF NITROGEN, WITH A CONSIDERATION OF THE PATHOLOGY OF COMPRESSION OF A TUBERCULOUS LUNG.*

BY A. F. LEMKE, M.D.

CHICAGO.

(Concluded from Page 1027.)

CASE 26.—Mr. J. S., aged 29, was examined November 3. His family is free from tuberculosis. In the spring of 1896 his illness began gradually with cough and expectoration, followed by a severe attack of hemoptysis; in the spring of 1898 a second attack of hemoptysis. Since that time his sputum has often been mixed with blood; weight 145 pounds; pulse 104; temperature 99.5 F. There are relative dulness, high-pitched respiratory sounds and crepitant râles over the right apex and the greater portion of the right upper lobe.

October 4: 125 cubic inches of nitrogen was injected into the pleural cavity. The pneumothorax was perfect, with very slight inconvenience to the patient.

October 11: Weight is 150 pounds; the cough considerably diminished; temperature 99 F; pulse 100. He feels generally improved. No report since October 11.

CASE 27.—Mr. J. M., aged 32, was examined Nov. 17, 1898. His parents are living and in good health. The first indication of disease in this case was a pulmonary hemorrhage in July, 1898. At intervals varying from a few days to a month he has had eight attacks of hemoptysis since July. He had a very slight hacking cough prior to his first hemorrhage, to which he paid no attention. The attacks of pulmonary hemorrhage were followed by fever and night sweats; weight 138 pounds. (Normal 165 pounds.) He is fairly well nourished; respiratory movements are diminished on the right side. There is some retraction of the right supraclavicular fossa, dulness over the apex only, but the resonance is also slightly diminished over the entire right upper lobe. There is bronchovesicular breathing over the right upper lobe and numerous crepitant and mucous râles. There are a few scattered râles over the left lung, but no dulness; temperature 100 F; pulse 120; respiration 22.

November 18: 165 cubic inches of nitrogen was injected into the right pleural cavity; pneumothorax perfect and gives rise to considerable dyspnea.

December 12: Weight is 140 pounds; temperature 90 F; pulse 120; respiration 21. Pneumothorax is still perfect. The cough is much diminished and expectoration very slight.

December 18: 160 cubic inches of nitrogen was injected.

December 27: Patient was confined to his bed on account of profuse diarrhea. His abdomen became painful and tender, the diarrhea alternates with constipation, and after a month's illness he had an intestinal perforation followed by a circumscribed abscess in the peritoneum. He was removed to Cook County Hospital. The peritoneum was to be opened and drained, but the patient died from the effect of the anesthetic before the incision was made. Immediately after death an incision was made through the abdominal wall. There was a diffuse tuberculous peritonitis; the intestines were matted together, and a large abscess was found in the right half of the abdominal cavity.

CASE 28.—Mr. M. J., aged 32, was examined Nov. 11, 1898. His parents are living and in good health, and his entire family is free from tuberculosis. His illness began one year ago with a slight cough and expectoration, which has gradually increased. Eight months ago he had several slight attacks of hemoptysis. There is a large quantity of expectorate (four ounces in twenty-four hours). He has had fever and night sweats during the last three months; pulse 100; temperature 101 F; weight 131 pounds. There is relative dulness over the right upper lobe, and mucous and crepitant râles are heard in this area. There are a few scattered râles over the right lower lobe, and some coarse dry rhonci throughout the left lung.

November 15: 130 cubic inches of nitrogen was injected into the right pleural cavity with slight dyspnea, and the patient returned home within an hour after the operation. Within the first few days after the operation there was profuse expectoration.

November 30: Weight is 137 pounds. The night sweats have subsided, the expectoration is diminished; the dry râles over the left lung are somewhat more numerous. There is still a considerable pneumothorax; temperature 99 F; pulse 96; respiration 21.

December 7: Weight is 137½ pounds; pulse 90; temperature 99.4 F, and respiration 22.

December 9: 160 cubic inches of nitrogen was injected into the right pleural cavity.

December 15: Weight is 138½ pounds; pulse 92; respiration 22; temperature 99 F. There are dry whistling rhonci over the whole left lung; right pneumothorax perfect. Patient did not appear for examination until March 22. At this time his weight was 148 pounds; his temperature normal. He coughed and expectorated very slightly and only during the early morning hours. The râles have almost entirely disappeared from the right lung, but are still present, as noted on December 15 in the left lung.

March 25: 115 cubic inches of nitrogen was injected into the left pleural cavity. The patient went home immediately after the operation, and has not appeared for examination since.

CASE 29.—Mr. O. S., aged 23, was examined Nov. 21, 1898. His family is free from tuberculosis. He has been sick since March, 1898, beginning with a cough and slight expectoration. In August, 1898, he had an attack of hemoptysis (about ½ pint); weight 134 pounds. (Normal 156). There is now considerable cough and expectoration; temperature 100.2 F; pulse 130; respiration 24. There is relative dulness over entire left lung, more particularly over the left lower lobe, but no signs of a cavity. Crepitant râles are heard over the entire left lung. The right lung appears entirely normal.

Dec. 1, 1898: 155 cubic inches of nitrogen was injected into left pleural cavity. There is a perfect pneumothorax.

December 10: Pneumothorax is still quite perfect. Patient has had no night sweats since date of operation. He states his cough has been diminished at least one-third; likewise his respiration; pulse 126; respiration 28; temperature 100.2 F. He has not appeared for further treatment.

CASE 30.—Mr. H. M., aged 18, was examined December 2. His family is free from tuberculosis. He began to cough six months ago and was confined to his bed with an attack of some febrile disease which he states was called typhoid fever. He was in bed but two weeks, however. He has coughed considerably since that time, and during the last month the expectoration has been very profuse. Recently he has noticed streaks of blood in his sputum, and has had drenching night sweats during the last three weeks. Weight is 110 pounds; temperature 101 F; pulse 108. He is emaciated and very pale. There is relative dulness over entire right lung, more marked over right upper lobe; marked consolidation over the apex. Vocal fremitus over the right upper lobe is very much increased, and râles are heard over every portion of the right lung. The sputum contains an enormous quantity of bacilli.

December 16: 72 cubic inches of nitrogen was injected into the right pleural cavity.

December 20: Pulse is 100; temperature 100 F; respiration 30.

Jan. 5, 1899: Pulse is 92; respiration 26; temperature 99.4 F; weight 115½ pounds. His color is very much improved. He coughs very little; there is almost no expectoration at this time.

January 6: 80 cubic inches of nitrogen was injected into the right pleural cavity.

January 9: Pulse is 90; temperature 99 F; respiration 26.

January 30: Pulse is 86; temperature 99.4 F; respiration 26; weight 116 pounds. He coughs very little and expectorates about one dram in twenty-four hours. No night sweats; appetite good, and very few râles are audible over the right upper lobe. Patient has been at work during the last two weeks, and has not appeared for treatment since.

CASE 31.—Mr. E. R., aged 26, whose father died of tuberculosis, was examined Nov. 21, 1898. In November, 1897, he had an acute attack of pleurisy and began at that time to have a slight cough. In September, 1898, he had an attack of hemoptysis; the second attack one week ago. At present there are occasional streaks of blood in the sputum. Weight is 125 pounds; pulse 120; temperature 102 F; respiration 25. He is emaciated and anemic. There is some retraction of the left clavicular fossa, and dulness over the left upper lobe. The râles over this area are numerous and are both crepitant and mucous. There are some few scattered râles in the left lower lobe. The respiratory excursion is good.

November 22: 120 cubic inches of nitrogen was injected into the left pleural cavity.

December 13: Patient states that during the four or five days immediately following the operation he expectorated very freely. He has had no night sweats, but the afternoon rise of temperature persists; pulse 100; temperature 100 F; respiration 38.

December 16: 140 cubic inches of nitrogen was injected into the left pleural cavity.

December 20: Pulse is 110; respiration 30; temperature 99.2 F. The patient has been at work during the entire time he has been under treatment. He is obliged to work or go to the county institution at Dunning, which, on account of his rapid pulse, I suggested that he do.

CASE 32.—Mrs. G., aged 32, was examined Dec. 6, 1898. She began to cough in April, 1898. There is no history of tuberculosis in her family. Soon after the onset of her disease she had a severe attack of dry pleurisy. She has expectorated freely, and two of the physicians who have treated her have discovered tubercle bacilli in her sputum. She is very anemic and considerably emaciated. The chest expansion is generally impaired; there is relative dulness over the left apex, and crepitant râles are heard throughout the greater portion of the left upper lobe. There is a friction rub over the left lung. Pulse is 117; temperature 99 F; respiration 23.

December 9: 95 cubic inches of nitrogen was injected into the left pleural cavity.

December 20: Pulse is 120; respiration 25; temperature 100 F.

January 3: 110 cubic inches of nitrogen was injected into the left pleural cavity.

January 15: Pulse is 100; temperature 99.5; respiration 20.

February 3: 114 cubic inches of nitrogen was injected into the same cavity. Following this operation she was confined to her bed for ten days with influenza, which was epidemic at that time.

March 13: Weight is 111 pounds; temperature 99.5 F; pulse 100; respiration 20. The examination at this time showed that there was considerable fluid in the left pleural cavity and that the lung was compressed to a marked degree, and no further injections were given. She is now progressing slowly; her weight is still 111 pounds. She coughs but little; is pale and has a considerable hydrothorax.

CASE 33.—Mr. C. S., aged 40, was examined Dec. 9, 1898. His wife died recently of pulmonary tuberculosis. His parents are free from tuberculosis, but one brother died of some variety of pulmonary disease. On Sept. 26, 1898, he had a chill followed by fever and since that time he has lost 35 pounds in weight. On September 22, a slight hemoptysis occurred. At present he weighs 161 pounds (normal weight 200); he has some fever during the afternoon and occasional night sweats. He is muscular, well developed and his appearance is anything but tuberculous. His expansion is good, there is no dulness, except over the apex of the left lung posteriorly. The breath-sounds over this area are harsh, and some scattered crepitant râles are heard over the entire left upper lobe posteriorly. His temperature is 99 F; pulse 88; respiration 28.

December 13: 172 cubic inches of nitrogen was injected into the left pleural cavity. There is a perfect pneumothorax.

Jan. 9, 1899: Pulse is 89; temperature 100 F; respiration 24. At this time the patient states that his cough and expectoration have decreased at least one-half, and during the last month he has had no night sweats.

January 10: 172 cubic inches of nitrogen was injected into the left pleural cavity, and the patient returned to his home in Ohio the following day. He has not appeared for treatment since. He presented himself for examination at Columbus, Ohio. He stated that his weight was 172 pounds; that he coughed very little and believed himself well, except for some gastric disturbance. There was comparatively little expectoration; his temperature was normal, and but few scattered crepitant râles were heard over the left upper lobe.

CASE 34.—Miss E. V., aged 14, was examined Nov. 20, 1898. Two years ago she had an attack of malaria and shortly afterward some variety of pneumonia. One year ago she began to cough and expectorate, and in July last to have irregular chills, followed by fever during the afternoon. The cough has never abated and she had night sweats, since July, 1898. Two weeks ago her blood was examined for malarial organisms, but with negative results. She is a tall anemic girl, weighing 105 pounds; pulse 110; temperature 102.5 F. There is dulness over the right upper lobe, and many crepitant and mucous râles. Her breathing is of the exaggerated vesicular type over this lobe. The sputum contains a large quantity of tubercle bacilli.

December 3: 100 cubic inches of nitrogen was injected. The pneumothorax was perfect.

December 10: Temperature is 99 F; pulse 110; respiration 25. Patient now coughs very little and expectorates only in the morning on rising.

December 23: Weighs 110 pounds (a gain of 5 pounds in twenty days); temperature 102 F. She feels stronger, is more energetic, and her general appearance is much improved. She was determined that she would take no more injections, and did not appear for her second operation as she was instructed.

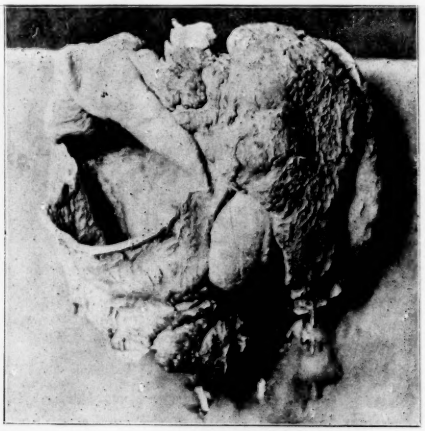


FIGURE 1.

FIGURE 2.

CASE 35.—Mrs. T. C., aged 32, was examined Dec. 15, 1898. Her family history was negative as to tuberculosis. She has had a cough for more than two years, but it has been especially troublesome and associated with alarming symptoms since April last. She has fever and night sweats; her expectoration is profuse and of a greenish color. She weighs 91 pounds. (Normal 113.) During the last six weeks her voice has been impaired, owing to a small tuberculous ulcer. There is dulness over the right upper and middle lobes, with bronchovesicular breathing and crepitant râles. There are a few fine crepitant râles in the left apex, but no dulness; temperature 100 F; pulse 130; respiration 28. There is a small tuberculous ulcer on the left vocal cord.

Dec. 16, 1898: 125 cubic inches of nitrogen was injected into the right pleural cavity.

Jan. 12, 1899: Weight is 96½ pounds (a gain of 5½ pounds). Her voice has materially improved although the ulcer still is present on the vocal cord. Pulse is 100; respiration 24; temperature 100 F. One month later she came to the city again, the operation was to be repeated, but pleural adhesions existed which precluded the possibility of a pneumothorax.

CASE 36.—Miss A. P., aged 22, was examined in December, 1898. Her mother has had some type of pulmonary disease for years; aside from this her family is not tainted with tuberculosis. During the summer of 1897 the patient lost ten pounds in weight, but no cough developed until May, 1898. She weighs 131 pounds. (Normal weight 140.) She coughs and expectorates profusely and has afternoon fever and night sweats. Temperature is 101 F; pulse 100; respiration 23.

December 30: 115 cubic inches of nitrogen was injected into the left pleural cavity. There was considerable tendency to syncope for an hour after the operation.

Jan. 30, 1899: The patient feels very much improved. Her general appearance is strikingly better; she now weighs 140 pounds (a gain of 9 pounds during the month); she has had no night sweats or fever, so far as she knows. The crepitant râles over the lungs are much less numerous than at the previous examination. The cough is now very slight, and the expectoration does not exceed one dram in twenty-four hours.

February 3: 147 cubic inches of nitrogen was injected into the left pleural cavity. The pneumothorax was perfect. The patient has noticed several segments of a tape-worm in her excreta, for which she was given Filix mas.

February 16: Patient expelled the tape-worm in toto; pulse 84; respiration 20; temperature 100 F.

February 28: 148 cubic inches of nitrogen was injected into the left pleural cavity. After this operation her cough subsided; she had no fever nor night sweats and did not appear for examination until April 9, when her cough was slightly more troublesome, although her general condition was very much improved. Scattered crepitant râles were still heard over the left upper lobe. The lung was again compressed. The pneumothorax, after an injection of 140 cubic inches of nitrogen, was perfect. Since last injection she has improved gradually; she has not increased further in weight, probably she has reached her normal in this respect. She has not reported during the last month.

CASE 37.—Miss M. M., aged 23, was examined Feb. 4, 1899. Her parents are living and in good health, and as far as she knowns no one in her family is afflicted with tuberculosis. This patient began to cough in February, 1897. She believed this to be an attack of simple bronchitis, although it continued for some time, and she finally recovered entirely and had no suspicion of pulmonary disease until May, 1898, when she began to cough and to lose weight and strength. She had fever, night sweats, and noticed in the sputum an occasional admixture of blood. She complains of pains in her right thorax. There is marked dulness over the right upper lobe, bronchovesicular breathing, decidedly prolonged extirpation, crepitant sibilant and mucous râles. There are some scattered râles over the apex of the right lower lobe, and right middle lobe. The left lung seems entirely negative. She weighs 94 pounds, her pulse is 115; temperature 102 F.; respiration 28.

February 7, 80 cubic inches of nitrogen was injected into the right pleural cavity. There was considerable pain over the base of the right thorax for some days after her injection.

February 23: Pulse is 118; temperature 99.5 F.; respiration 28.

March 2: 90 cubic inches of nitrogen was injected into the right pleural cavity. After this operation she began to improve rapidly; she gained six pounds in weight during the two weeks following the operation.

April 1: Weight is 101 pounds; temperature 90 F.; pulse 100; respiration 24. The right upper lobe seemed entirely free from râles, the breath-sounds seemed harsh and tubular; the liver dulness extended as high as the fourth interspace. There was some retraction of the chest wall. All active symptoms of disease had abated. Her weight was within three pounds of the maximum point. Inasmuch as the pleural cavity was probably obliterated by adhesions and the patient's condition was so promising, she was discharged without further attempts at compression.

CASE 38.—Mr. J. M., aged 38, was examined April 9, 1899. His family has been free from tuberculosis for two or three generations. Eight months ago he developed a slight cough and shortly afterward had three attacks of hemoptysis. The total quantity of blood he estimates at nearly one quart. His weight has diminished from 168 pounds (normal) to 140 pounds. He coughs considerably during the day and during the night; this is a distressing symptom. He has no pain in his thorax; sputum contains a moderate quantity of tubercle bacilli. During the last two months the expectoration has been very profuse, and he estimates it at three ounces in twenty-four hours. There is a relative dulness over the left lower lobe, and râles are scattered over the greater portion of this area; pulse 120; respiration 23; temperature 98.5 F.

April 11, 1899: 119 cubic inches of nitrogen gas was injected into left pleural cavity. In this case the improvement has been but slight, if there has been any.

May 10: The second injection of 120 cubic inches of nitrogen was given. The patient returned to his home, and as he lives some distance out of the city he has not reported since his last operation.

CASE 39.—Mr. J. R., aged about 45, was first seen Oct. 13, 1898. He has had pulmonary disease since 1893, and since that time he has been able to work but six months in the year. In May, 1898, he was advised to change climate, but he felt that he was not improving and returned in September, having lost ten pounds in weight while away from home. When first examined he had been confined to his bed constantly for two months, and he was gradually growing weaker. His family physician told him that unless something could be done immediately he could not live many weeks, and advised, as a last resort, that the compression treatment be given a trial.

Nov. 13, 1898, a careful examination was made. The right upper lobe was dull to percussion; there were signs of cavity in the third interspace anteriorly and râles were heard over the entire lung. The breath-sounds over the upper lobe were tubular, and quite harsh over the right lower lobe. There were scattered râles throughout the left upper lobe, but the expansion of the left lung was good. His pulse was 110; respiration 28; temperature 102 F. The injection was made on the same day, and by the use of considerable pressure 135 cubic inches of nitrogen was forced into the pleural cavity. Ten days after the operation he got out of bed and walked to the market to be weighed. His weight was 104 pounds.

Dec. 23, 1898: a second injection of about the same quantity was given. His cough improved somewhat.

Feb. 24, 1899: He writes that his cough is considerably better, and asks that the treatment be continued. At intervals of four weeks he has had three operations. He now weighs 106 pounds, is out of bed the entire day and able to do considerable walking.

May 24: His pulse is 100; respiration 28; temperature 99 F. The signs of cavity in the right upper lobe have disappeared, there is much fibrosis in the right lung. The patient's general condition is somewhat improved; he is able to be out of doors the greater part of the day; his appetite is now improving and, whereas nothing can be expected in the nature of permanent cure in such a case as this, he promised to improve sufficiently to enable him to live for some time in comparative comfort.

CASE 40.—Mr. C. H., aged 38, was examined March 31, 1899. He has been sick one year. His parents are living and in good health at an advanced age. One brother and five sisters are living and healthy. His cough has gradually grown worse in the past year, but was not violent until February 23, when he had a severe attack of hemoptysis, after which he developed a high temperature and for several days after his attack it reached 104.5 F. Pulse is now 110; temperature 102.5 F.; respiration 24; weight 128 pounds. There is considerable retraction of the right chest. He perspires freely, almost continuously. There is only slight respiratory excursion of the right lung, and râles are very numerous over the right upper lobe. Over the right middle and right lower lobes they are comparatively few.

April 4, 1899: 60 cubic inches of nitrogen was injected into the right pleural cavity, with very little discomfort to the patient.

April 28: Weight is 131 pounds. He coughs less and expectorates very little; pulse 100; temperature 99.5 F.; respiration 24.

May 12: Weight is 136.5 pounds (a gain of 8.5 pounds).

May 16: The patient was given another injection of 100 cubic inches of nitrogen gas.

CASE 41.—Sister ——, aged 30, was first examined Feb. 8, 1899. She has been sick with pulmonary symptoms for two years. It began with huskiness of the voice. In June, 1897, she began to cough. July 10, she had two or three slight attacks of hemoptysis. Her cough gradually became more harassing, but she did not feel especially alarmed until July, 1898. In January, 1899, she became so much worse that two doctors were called to the convent, who examined her carefully, found that she had an extensive involvement of the left lung, and made an unfavorable prognosis.

On Feb. 6, 1899, an examination of the patient showed relative dulness over the entire left lung, with many coarse mucous and crepitant râles throughout.

February 6: 115 cubic inches of nitrogen was injected into the left pleural cavity. Her temperature at this time was 100.4 F.; weight 127 pounds.

March 9: 130 cubic inches of nitrogen gas was injected into the same side; temperature 99.2 F. She lost some weight after the first injection, the lowest point having been 124 pounds.

April 6: 120 cubic inches of nitrogen gas was injected into

the left pleural cavity; weight at this time 127 pounds. Two weeks after this injection she developed a severe intercostal neuralgia. Her temperature remained normal.

May 8: The fourth injection of gas was given. Since that time her temperature has never been above 99, and her weight has increased to 127 pounds. As examination at the time of the last operation showed the left lung markedly improved. There were comparatively few râles. The cough and expectoration have diminished very much, and the doctor in charge of the case has made repeated examinations of the sputum with negative results.

CASE 42.—Mrs. A. E., aged 35, was examined Dec. 25, 1898. Her family history is free from tuberculosis. She began to cough in December, 1897. She has had afternoon elevations of temperature and chills. Frequently also, she has had night sweats. In October, 1898, she had two attacks of hemoptysis (about five ounces). Her present weight is about 103 pounds (normal 108 pounds). The expansion of the left thorax is impaired; there is a marked dulness to percussion over the left upper lobe, where many crepitant and mucous râles are heard. There are some scattered râles over the left lower lobe. A few crepitant râles were heard in the right apex, but there was no change of note on percussion. Tubercle bacilli were present in the sputum in large quantities.

December 30: 115 cubic inches of nitrogen injected into the left pleural cavity. There was a short syncopal attack immediately following the operation. Subsequently this patient went to the tuberculosis hospital at Dunning, where she has been given four injections, three and one-half to four weeks apart.

FIGURE 3.

May 9, 1899: She presents herself for examination. Her color is good; she weighs 106 pounds; coughs very little and only in the morning. She expectorates about one dram in twenty-four hours. She has no night sweats; pulse 84; temperature 99 F.; respiration 28. There is dulness over the left upper lobe. The crepitant râles are very few and scattered here and there over the upper lobe. The crepitant râles heard over the right apex at the time of the original examination are still to be heard, and there are, as yet, no changes in the percussion note in the right lung.

CASE 43.—Mrs. J. F., aged 30, had a chill Nov. 1, 1898, and developed a cough associated with considerable expectoration and with pains in the chest. For a year previously she has had occasional attacks of bronchitis. She gives a good family history. Examination, on Dec. 7, 1898, shows a slight relative dulness over the left apex; the excursion of the lung is good; crepitant rales are heard over the upper third of the left upper lobe, anteriorly. At the apex of the left lung expiration is prolonged and high pitched. The examination of the sputum shows the presence of tubercle bacilli in moderate quantities. This patient was injected at intervals of four weeks, for four months, when her subjective symptoms and the physical signs had almost disappeared. She was then advised to change climate and remain away from home for at least a year.

June 17, 1899: She has returned from New Mexico and is, subjectively, in perfect health. There is no cough nor expectoration. On physical examination of the lungs there is nothing to be heard but slightly prolonged expectoratory sound over the left apex. There are no râles.

CASE 44.—Mr. W. K., aged 26, was examined Nov. 24, 1898. His family history is good, except that his maternal grandfather died of tuberculosis at the age of 33. He has been sick four years and states that his pulmonary disease followed immediately upon an attack of influenza. He has taken a long course of antitoxin treatment, but has gradually lost in weight until at present he weighs but 137 pounds (normal 145 to 150 pounds). He has considerable shortness of breath, and coughs almost constantly; temperature 99.5 F.; pulse 90. He is moderately emaciated; there is relative dulness over the entire right lung; bronchovesicular breathing over the right upper lobe and numerous râles, both mucous and crepitant, are heard here. His sputum contains considerable quantities of tubercle bacilli.

November 24: 120 cubic inches of nitrogen was injected into the right pleural cavity.

November 28: Temperature is 98 F.; pulse 90. There has been profuse expectoration since the operation, but he has had no fever or night sweats. The operation in this case was repeated at intervals of four weeks. He gained eight pounds in weight; his cough and expectoration diminished but did not disappear. He has not reported since his last operation.

CASE 45.—Mr. C. K., aged 33, was examined Dec. 5, 1898. His family is tuberculous. He has been sick one year with a

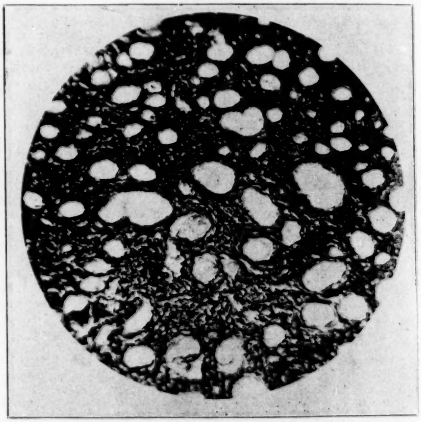


FIGURE 4.

cough, fever and night sweats; no hemoptysis; temperature 101.5 F.; weight 128 pounds (maximum 145 pounds). He expectorates very freely and estimates the quantity expectorated at three ounces in twenty-four hours. His face is flushed; respiration rapid (28 per minute). There is some retraction of the upper right chest. There are no signs of cavity, and the respiratory excursion of the lungs is normal. There are crepitant and mucous râles over the entire right lung, especially numerous over the right upper lobe. The tubercle bacilli are present in the sputum.

December 6: 88 cubic inches of nitrogen was injected into the right pleural cavity.

December 9: The patient complains of rheumatic pains in his right leg, it feels weak, his appetite is poor. The pneumothorax is still very marked; pulse 128; temperature 100 F.; respiration 30. On account of his rheumatic pains he was obliged to remain in bed nearly two weeks after his operation. During this time he had a high fever; his temperature frequently reached 104 F.; his pulse was full and rapid, ranging from 120 to 130, and his respiration 32.

February 12: He was still too weak to leave his bed, and inasmuch as the pneumothorax had entirely disappeared, the second operation was made at his home. This time 115 cubic inches of nitrogen was injected. Shortly after his fever began to abate, and with it his pulse improved and he was injected

a third time on March 10, the same quantity (115 cubic inches) of gas being employed. Two weeks later, upon careful examination of the chest, it is discovered that there was a marked succussion splash. The gas was partially absorbed, but very slowly, and the fluid gradually increased in quantity to displace the gas. The compression of the right lung had been maintained by the serous effusion, and at the last examination of the patient, on June 1, nothing could be heard over the right lung, but tubular breathing along the inner border of the right scapula and a few mucous clicks at the very apex of the right lung. He has gradually gained in weight, from 116 pounds (at the time of his second injection) to 134 pounds at the present time. He is now at work, coughs only occasionally and does not expectorate at all.

CASE 46.—Mrs. H. L., aged 24, was examined Oct. 25, 1898. There is no tuberculosis in her family; she began to cough in July, 1898. During August, the cough increased in severity and she gradually became emaciated. On October 8, she had two attacks of hemoptysis (three pints). Since these attacks she has had some elevation of temperature and night sweats; weighs 100 pounds; pulse 100; temperature 98.6 F. There is a considerable area of tuberculosis in the right apex.

October 26: 115 cubic inches of nitrogen was injected into the right pleural cavity, and a few days later the patient was sent to Arizona. She has sent no accurate report of her condition more than that she is very much improved, has gained in weight, but does not state how much, and her cough has entirely disappeared.

CASE 47.—Mr. F. L., aged 43, whose family history is not tainted with tuberculosis; presented himself for examination

FIGURE 5.

on Nov. 15, 1898. He has coughed since May, 1892; has fever during the afternoon; night sweats and marked dyspnea, which is sometimes paroxysmal, having had numerous typical asthmatic attacks. He coughs constantly and expectorates freely; weight 120 pounds; pulse 115; respiration 25; temperature 103 F. There is relative dulness over the right upper lobe, and numerous crepitant râles during respiration are heard over the entire right lung. There are dry piping rhonci during expiration. Over the left apex a few crepitant râles are heard, but the expiratory dry rhonci are numerous. The sputum has always been mucopurulent, and now contains tubercle bacilli.

November 25: 110 cubic inches of nitrogen was injected into the right pleural cavity.

December 15: Weight is 130 pounds; pulse 100; temperature 98.8 F.; respiration 20. Pneumothorax still exists.

December 22: Pulse is 84; respiration 25; temperature 98.6 F.

December 23: 115 cubic inches of nitrogen was injected.

Jan. 19, 1899: Pneumothorax is still quite marked; pulse 72; respiration 16; temperature 98.6 F.; weight 130 pounds. The patient at this time was advised to go to a more promising climate, and no report has been received since.

CASE 48.—Mrs. M. N., aged 40, whose parents are living at an old age, and who had one aunt die of tuberculosis at the age of 45, began to cough in June, 1898. At present she complains of distressing cough, associated with much expectoration, irregular elevations of temperature and occasional night sweats. She weighs at present 105 pounds (normal weight 132 pounds). There is relative dulness in the right upper lobe. Rough breath-sounds and crepitant râles are heard in this area; no signs of cavity. Tubercle bacilli are present in the sputum; pulse 84; respiration 26; temperature 99.5 F.

Dec. 2, 1898: 147 cubic inches of nitrogen was injected into the right pleural cavity, resulting in a perfect pneumothorax.

December 27: She has gained two pounds in weight; coughs as before; temperature (taken in forenoon) 99.6 F.; pulse 80; respirations 20. 165 cubic inches of nitrogen was injected.

January 25: 172 cubic inches of nitrogen was injected, resulting in a perfect pneumothorax.

April 3: Weight is 126 pounds, although she has reached 130 pounds since last injection. She still coughs and expectorates quite freely; temperature 99.5 F.; pulse 90; respiration 23.

April 4: 165 cubic inches of gas was injected. The patient has not appeared for examination since last operation. The most important feature in this case is the marked improvement in the pulse-rate and the temperature.

CASE 49.—Mr. J. M., aged 33, had been sick three months when he appeared for examination, Dec. 5, 1898. His wife died of pulmonary tuberculosis in April, 1898. His illness began rather suddenly, with cough, fever and profuse night sweats. His appetite has been poor until recently. He now coughs and expectorates freely; temperature 100 F.; pulse 110. The sputum contains tubercle bacilli. The right apex is retracted.

FIGURE 6.

There is relative dulness over the upper half of the right upper lobe. Crepitant râles are heard over this area. Present weight is 155 pounds (normal 157 pounds).

Dec. 6, 1898: 115 cubic inches of nitrogen injected into the right pleural cavity resulted in a perfect pneumothorax.

December 13: There is still a marked pneumothorax; pulse 90; temperature 98.8 F.; respiration 26.

Jan. 3, 1899: 155 cubic inches of nitrogen was injected; January 28: 186 cubic inches; March 3: 180 cubic inches; April 14: 171 cubic inches.

May 27: Weight is 155 pounds; pulse 91; temperature 99 F.; respiration 18. At this, the last examination, the patient stated that he felt well in every particular; that his appetite was good; that the cough was now very slight and the expectoration noticeable only in the morning. Very few crepitant râles are now heard at the very apex of the lung. An examination of the sputum shows the presence of a few tubercle bacilli.

CASE 50.—Mr. P. O., aged 32, whose parents are living and in good health and who has seven healthy brothers and one sister, began to cough in May, 1898. Very soon after the onset of the cough he noticed slight night sweats, with considerable pain in the right chest. He was examined Dec. 5, 1898. There is extensive tubercular infiltration, involving the right upper and right middle lobes. The left lung is negative; pulse 96;

temperature 101 F.; respiration 23. There is bronchovesicular breathing over the right upper and right middle lobes, and râles are heard everywhere over these areas. The sputum contains tubercle bacilli; weight 136 pounds.

Dec. 6, 1898: 88 cubic inches of nitrogen was injected into the right pleural cavity. The pneumothorax was only moderate, but was followed immediately by profuse expectoration.

Jan. 5, 1899: 85 cubic inches of nitrogen was injected into the right pleural cavity.

February 1: a third injection of 80 cubic inches of gas was made. The patient had not improved appreciably; his pulse became more rapid and the injections were discontinued.

CASE 51.—Miss D. R., aged 22, was examined Oct. 7, 1898. Her mother died of pulmonary tuberculosis at the age of 36. One sister and brother have died of this disease. On May 17, 1898, she had profuse pulmonary hemorrhage (one pint), after which she developed fever, violent cough and night sweats. June 14, she was sent to the country, where she remained two and one-half months, with some improvement in her pulmonary symptoms, but no gain in weight. She now complains of an annoying cough, attended with considerable expectoration; weight 106 pounds; temperature 100 F.; pulse 115. There is slight relative dulness over the left apex, where numerous crepitant râles are to be heard. The right lung is normal.

Oct. 11, 1898: 110 cubic inches of nitrogen was injected into the left pleural cavity. This was followed by some pain and dyspnea, which, however, disappeared.

Dec. 14: Weight is 111 pounds; temperature 99 F.; pulse 100; respirations 22. Breath-sounds at this time are distinctly audible, and the physical signs in the left apex are still present.

December 15; 100 cubic inches of nitrogen was injected.

April 10: Patient was examined to determine the advisability of a third injection. The physical signs at that time were merely those of relative dulness over the left apex with high-pitched and prolonged expiration, but no râles were heard. She coughed only very slightly, and only in the morning immediately after rising. An examination of the sputum showed an absence of tubercle bacilli, and the injection was not repeated.

CASE 52.—Miss N. S., aged 19, was examined Dec. 6, 1898. Her parents are living, and in good health; three sisters and two brothers are in good health. She began to cough in November, 1897. She had chills in the forenoon, a considerable elevation of temperature in the afternoon and night sweats. The expectoration is profuse; tubercle bacilli are present in the sputum; weight 99 pounds (maximum weight 111 pounds). There is considerable emaciation; face flushed; temperature 101 F.; pulse 120; respiration 25. There is considerable retraction of the left thorax and dulness over the entire left lung, with râles equally distributed over both lobes. There are no signs of cavity, but the breath-sounds over the left upper lobe are quite tubular. There are scattered crepitant râles throughout the left upper lobe. In this case the injection was undertaken with much reluctance on account of the extensive involvement.

Dec. 17, 1898: 90 cubic inches of nitrogen, with much pressure, was forced into the pleural cavity. There was considerable pallor and marked dyspnea immediately after operation, and the expectoration was enormously increased.

Jan. 3, 1899: 90 cubic inches of gas was again forced into the left pleural cavity.

February 2: Her weight was 96 pounds (a loss of 3 pounds). There is no improvement except that the expectoration has slightly diminished; temperature 100; pulse 110; respirations 28. The case was discharged.

CASE 53.—Mrs. A. S., aged 42, was first examined in October, 1898. One sister died of tuberculosis that was said to have developed after typhoid fever. She began to cough three years ago; she then became pregnant and improved considerably, so that she was quite free from cough until six weeks after parturition, when the cough and expectoration returned and have since persisted. Her normal weight is 197 pounds; at present she weighs 188 pounds; she coughs and expectorates freely for some time after rising in the morning. During the day the cough is less troublesome; she has some fever but no night sweats. Examination shows a large, well-nourished woman of ruddy complexion, pulse 88; temperature 99 F.; respiration 20. Expansion is limited on the left side. There is a relative dulness over the entire left upper lobe and the usual mucous and crepitant râles are heard here. The breath-sounds are roughened. There are a few râles over the left lower lobe; few scattered râles over the right apex. The percussion-note is normal over the entire right lung.

October 10: 150 cubic inches of nitrogen was injected in the left pleural cavity. Much of the gas escaped within the first forty-eight hours after the operation, and the left lung was distended when the patient was examined two weeks later.

November 3: 154 cubic inches of nitrogen was injected; December 31: 160 cubic inches; January 30: 160 cubic inches.

February 26: The patient has not gained in weight, which may be expected, in that she has lost but little and weighs 180 pounds. The râles have almost disappeared over the left upper lobe, she coughs only lightly immediately after rising, and feels much improved generally. She was discharged without further injections because the examination of the sputum showed an absence of tubercle bacilli.

To these cases I am able to add a brief report of cases treated by Dr. C. P. Thomas of Spokane, Wash. May 13, 1899, he writes:

"Inasmuch as I have not kept a close record of the progress made by my cases I do not think they will be of value to you. I can state unhesitatingly, though, that in those cases which I now know to be suitable for the treatment, viz., those in which but one lung is involved, and in it there is a cavity without too many adhesions, it has proven most satisfactory. In that class of cases numbering six, two are considered cured, each having gained over 20 pounds. The other four, still on treatment, are steadily gaining. In every case the temperature, cough and expectoration, and in two in which there was hemoptysis, the symptoms have at once disappeared, either in part or in whole."

We have never had an opportunity to attempt to check pulmonary hemorrhage by injecting nitrogen into the pleural cavity to compress the lung, but it would seem that this were a rational procedure.

About twelve cases have been injected whose histories I have been unable to obtain. The results in all of them have been quite uniform in many respects. It it always to be expected, no matter what be the stage of the disease, or its extent in the lung, that the injection is nearly always followed by an increase of expectoration for a few days immediately following the operation. In the earlier cases, where the disease is limited to the apex, and where the expectoration has always been slight, this does not apply. It is remarkable what a fall in temperature is often to be noted, even during the first day after the lung is compressed. The dyspnea is never severe, and usually disappears within an hour or two after the operation. A subcutaneous cellular emphysema may become troublesome when the dressing is not properly applied, the gas being expelled into the subcutaneous cellular tissue during the efforts at coughing.

I shall refer now to the accidents that have occured in connection with our work. Case 17 is particularly interesting and instructive in this connection, inasmuch as it is the only case in which an accident of any gravity has occurred. How shall we account for the hemiplegia that developed in this case? Many theories have been framed to explain such an occurrence in connection with operations on the thorax. Many cases are reported in the literature, but no explanation is offered for the specific instances. The most important theories are: 1, the reflex theory; 2, the gas-embolism theory. Janeway[10] reports a case in which two attacks of temporary hemiplegia occurred in the same individual as the result of the use of hydrogen peroxid in a sacculated pleural empyema. He cites a case published by Leudet in 1888, in which hemiplegia occurred in a patient whose empyema cavity was being irrigated with a solution of iodin. In this case, there was no loss of consciousness. Janeway believes these accidents to be best explained by supposing the hemiplegia to be due to a gas embolism.

In another case, whose history I was not able to obtain, a profuse hemorrhage occurred immediately after

the introduction of the needle and before the tube that conducts the gas had been attached. This hemorrhage was undoubtedly due to a rupture of some vessel, possibly in the wall of a large cavity that existed in his left upper lobe. He had had repeated attacks of hemoptysis, and all of them had been profuse. The needle was inserted to a distance of approximately 2 cm., and it is scarcely possible that a vessel of sufficient size could have been wounded to bleed so profusely, as did this patient. It was indeed a case of pulmonary apoplexy.

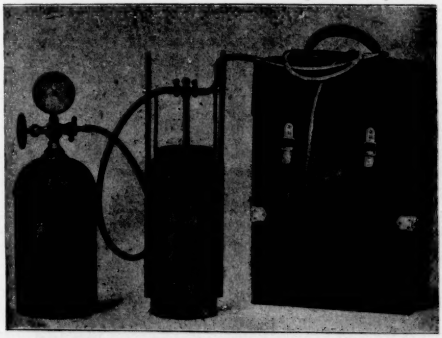
We have had an opportunity in but a single case to study the pathologic changes that are found in tuberculous lungs that have been for some time subjected to pressure. Comparatively little is to be found in medical literature relative to this. Rokitansky[11] observed that after long-continued compression of a lung, a certain degree of fibrosis developed in it. According to Cornil and Ravier[12] the change consists principally of an edema and an exfoliation of epithelial cells. Dunin[13] quotes Herz[14], who is brief on the subject and merely states that our knowledge of the changes that occur in the lung as a result of pressure is meager, and that it has not been proven that alveoli are permanently ob-

FIGURE 7.

literated by adhesions of their walls. Dunin made a careful study of the changes that occur in animals' lungs that he collapsed by injecting air, or by exciting an inflammatory change in the pleura that was attended with serous or purulent exudation. He did not succeed in maintaining a compression of the lung for a great length of time. On microscopic examination of a lung that had been collapsed six hours, the alveoli were found compressed, the capillaries in the alveolar walls were quite empty and no red cells were found in the interior of alveoli. The large vessels were well filled with blood. The epithelium was intact. In the opposite emphysematous lung the vessels in the alveolar walls were distended with blood. In the lungs that have been compressed for a longer time bands of connective tissue began to develop about some of the bronchi and also around some of the larger vessels. Alveoli are not permanently obliterated, unless compression has continued a long time—no time limit given—or unless inflammatory changes supervene. The development of connective tissue is due to slight infection, the stimulus of which is not destructive, but productive, or to altered nutrition of th eareas. The mucus in these bronchi always contains some micro-organisms. Dunin concludes that when a lung that has been long compressed loses its distensibility it is due largely to a thickened pleura and in a measure to the fibrosis.

In a tuberculous lung under ordinary conditions, i. e., one not subjected to pressure, the healthy lung tissue in the immediate vicinity of the tuberculous foci frequently becomes atelectatic, as the result of compression of a small bronchial tube, the structures become edematous, owing to a passive hyperemia, the epithelia undergo fatty degeneration and are desquamated, the septa thus robbed of their covering become adherent and finally are transformed into connective-tissue bundles which surround the diseased areas[15]. In a tuberculous lung subjected to long-continued pressure, this is likewise true, and these circumscribing cicatrizing processes proceed more readily.

In the case we have studied, with a view to determine the histologic changes due to compression, the lung was removed from a patient who had been treated for pulmonary tuberculosis at the Dunning institution. He had extensive tuberculosis in both lungs, but at the time of the first operation the disease was principally in the right upper lobe. The right pleural cavity was injected in May, 1898, after which he gained 10 pounds



The above is a cut showing the apparatus which I use to inject nitrogen into the pleural cavity. It is manufactured by the Chicago Oxygen Gas Co.

in weight. Early in October the left pleural cavity was injected. An examination record made Dec. 17, 1898, proves that no empyema existed at that time. After his last operation this patient was given a pass and was absent from the hospital a considerable portion of the time. May 8, 1899, a pneumothorax developed on the left side, and the patient died very suddenly. The necropsy disclosed an enormous empyema on the right side. There was an extensive tuberculosis of the left upper lobe, and the upper part of the lobe was honeycombed with cavities, the largest of which is the size of a walnut. The trachea, both lungs, the empyema sac, and the heart were removed in toto and photographed. (See Figs. 1 and 2.)

The right lung is not visible in the figure. It is crowded upward and backward toward the hilum, and is scarcely as large as the hand. The upper and middle lobes are completely airless, but the lower lobe, in spite of the marked degree of compression, crepitates slightly. Many linear scars are visible throughout the upper lobe, marking the sites of obliterated cavities.

Some few of the larger cavities are not yet completely obliterated organically, but their walls are everywhere in apposition. There is an extreme degree of fibrosis in the upper lobe, and the pleura forming the wall of the empyema sac is 4 to 5 mm. thick. The pleura pulmonalis covering the posterior surface of the lung did not enter into the formation of the empyema sac, and is not so thick (from 1 to 2 mm.). Pieces of tissue from the fibrous area have been imbedded, sectioned and stained after Van Giesen's method to show the distribution of the connective tissue; others are stained with carbolthionin, saffranin, hematoxylin and eosin. The acid fuchsin has dyed every fiber of mature connective tissue beautifully and plainly. In some areas great ribbon-like bands of connective tissue pass across a whole field and even across the entire section. Some of these bands encircle a bronchus and others are intimately connected with the larger vessels. Areas of alveoli in which no tubercular or caseous foci are found, occupy the spaces between the bands of connective tissues. Most of these are collapsed. (See Fig. 3.). Sections made from tissue removed from the apex show a very peculiar honeycombed appearance. (Fig. 4.) The spaces, the cut ends of dilated bronchioles, are separated from each other by thick bands of connective tissue in which the fibers are arranged so as to encircle the tubes, but at the same time the fibers at some distance from the lumen intertwine with similarly arranged fibers of the neighboring bands. There are large and small caseous masses, but all are surrounded by thick walls of connective tissue. (Figs. 5 and 6.) In Fig. 6 fine bundles of connective-tissue fibers are seen to pass in the caseous areas and even in the very centers of some of these foci fine fibrils are visible. It is quite evident that contraction of these capsules of connective tissue, which is the inevitable result, must give rise to complete necrosis of the enclosed masses if this has not already taken place. In spite of the prolonged intense compression which has resulted in obliterating the great mass of alveoli some of these structures appear to be wide open. Fig. 7 shows a field in the same section with Fig. 3, in which are seen cross-sections of vessels surrounded by fibrous tissue and in the same field with them are open alveoli.

I desire, in this way, to express my appreciation for the support and encouragement in this work that I have received from Dr. Murphy, and to thank him for having referred to me the cases that make up the greater portion of this report.

Since the original report was prepared about 40 cases have been injected, with results that are on the whole very gratifying. These will be reported in detail later.

I have been asked repeatedly as to the effect of compression of one lung on the opposite in instances of bilateral lesions. In answer I would say that whereas cases of bilateral pulmonary tuberculosis are not as favorable for recovery, no matter what treatment be instituted, as is true of unilateral involvement, yet they should not contraindicate compression of the lung more advanced in the disease. That the disease in the functionating lung shows any special tendency to heal under such conditions, I am not prepared to say. Compression of one lung does not tax the other to any considerable extent, and the improvement of the general condition of the patient may effect favorably the disease in the active lung, provided it be not too extensive.

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DISCUSSION ON PAPERS OF DRS. HOLMES, M'CONNELL, AMBLER AND LEMKE.

DR. CARROL E. EDSON, Denver, Colo.—No one can deny the great importance of the subject of tuberculosis. The papers are all very interesting and carry with them facts and statements worthy of consideration. Dr. McConnell's paper can not be too strongly emphasized. Those of us who live at high altitudes are most deeply impressed with the importance of an early diagnosis. We see the importance of it as you do not; we see and know the results and sign the death certificates. The early stages of tuberculosis are not those of cavities, or of beginning cavities, or of breaking down. It is long before that. The early stages of tuberculosis date back six months before it is recognized, i. e., in the average cases. I can, without hesitancy, say that in more than one-half the cases that come to me suspicious symptoms had arisen six months before medical advice was given. The early stages of tuberculosis are those of general infection and general depression of health and not the local signs in the lungs. When a patient, without obvious cause, begins to lose weight and energy and "snap" and appetite, and feels "below par" and comes to the general practitioner, then he should think that it may be the beginning of tuberculosis. Tuberculosis first shows itself as a general debility. Watch the temperature of your patient who has general debility. If there be a slight rise in temperature, and creeping sensations, do not tell him he has malaria. During the past year nearly one-third of the patients I have seen in Denver have come with the history that some time before they "had had malaria." They give the history that for a month or two months they have been treated with quinin for a mild chronic malaria. If there is one disease in which we can make a definite diagnosis it is malaria. Do not treat for malaria your tuberculosis cases. Watch for beginning chills. Do not send advanced cases or those with pneumonia consolidations to high altitudes; they do not do well and they must be sent back.

DR. CHAS. L. MINOR, Asheville, N. C.—I wish to thank Dr. Edson for his most excellent remarks; one who sees much of this class of work has frequent occasion to see how many errors of diagnosis are made in early cases and is glad to see the facts dwelt on so clearly. I, myself, would like to say a few words on the question of prophylaxis; we are all interested in the cure of this trouble, but if the present death-rate from consumption is to be materially lessened it is to prophylaxis we must turn our attention. The profession is at last coming to realize that the rational treatment of this disease is the hygienic and dietetic, but if these same measures were put into service not only after the trouble has appeared but beforehand, if they were used in the chlorotic, in the dyspeptic, in the overworked, in those burdened with a bad heredity and, indeed, even in the apparently robust, we would begin to see results in the wiping out of consumption that we now only dream of. How many of your patients understand what it is to properly ventilate their houses in the day, not to mention the night; how many appreciate the health giving powers of sunlight; how many use their lungs to the full? According to my experience, not only in the tubercular but in the healthy, not one in twenty and, yet how many doctors take the time and trouble to teach families the care for these things or, I may add, practice them themselves? How many content themselves with treating disease when it develops and never think of warding it off before it appears? In a country like ours, where too few have a real belief in the virtues of fresh air and live in stuffy, ill-ventilated houses all winter, in a land where bad digestion is the rule

[1] Dr. C. P. Ambler's paper appeared in the Journal of July 8.

and not the exception, what can we expect but an unduly large percentage will sooner or later fall victims to this disease? All this can be changed if we doctors will realize our duty as the teachers of the public, and never cease drilling into them the principles of pulmonary hygiene.

In conclusion, I would like to thank Dr. Ambler for his paper, I am glad to see one man who uses serum not a fanatic on the subject and not claiming every virtue and no defects in the article. A mild skeptic myself, yet open to conviction, I believe I get fully as good results from climate and hygiene, but if all users of serum were as judicial as the Doctor, we might hope before many years to be able to form some definite conclusions as to its value and at last leave behind the present purely experimental stage.

Dr. Allen of Missouri—I was particularly interested in the remarks of the last two speakers in reference to early diagnosis. I regard the weekly examination as very important, made with the microscope; this I consider the only true way to make a diagnosis. But one must first qualify before he can make a diagnosis with the microscope. Up to 1894 I used the general treatment with creosote, hypophosphites, strychnin, quinin and tonics, and they improved a little. In 1894 I began a combination of these things administered *judiciously*. All men can not take creosote, or opium or cod-liver oil. In cases with chronic ulceration of the duodenum they can not take these things and so I combined with the serum and, in seven cases, when I began this combined treatment, at the end of thirty days there was a decided improvement in every one. In three cases there were no bacilli to be found at the end of three months; one of these cases was extremely refractory. Three of the cases were far advanced and I had given the opinion that they could not be cured, but they all improved. So I am decided in favor of the use of the serum in combination with the judicious use of certain drugs, given as the conditions call for. We must individualize.

Regarding Dr. Murphy's treatment, compression lessens the amount of nutrition sent to the lung, by lessening the *vis medicatrix naturae*. I can understand how this pressure may be beneficial. I expect you to treat these cases from time to time, yet you can not expect us to send to you our cases; they must stay at home, where we must do something. What do you mean by climate? You speak of sunshine: why sunshine? I am inclined to be somewhat skeptical in regard to this matter when we see so many handsome ladies and gentlemen in these same climates.

Dr. J. F. McConnell, Las Cruces, N. M.—I am sure we are all greatly pleased with the discussion which has followed the reading of the papers; this should result in great advantage to all of us. In regard to the climatic conditions, what I endeavored to show in my paper was, that in the early stages (pretubercular period) one should try to convert a hypotrophic constitution into an orthotrophic one, rather than wait for positive evidences of infection. If anything be superior it is good environment. In regard to dryness, Beaugarde stated that the tubercle bacilli could not live without moisture; so dry air tends to destroy, while moist air tends to nourish the bacilli. I am greatly indebted to Dr. Edson for the emphasis he placed on certain points in my paper, and also to the other gentlemen for the various points made in regard to the serumtherapy. In the early diagnosis I use the iodid of potassium in very small doses, and I often get surprising results, especially in the stethoscopic examinations. In auscultation, I find, after giving small doses of this drug, evidences of inflammatory conditions, which previously were absent. So this is an invaluable aid. I have frequently found that I could make a positive diagnosis of tuberculosis after the use of iodid of potassium, which I could not do before the administration of this drug.

In conclusion I would like to particularly emphasize the fact that an early diagnosis and the prompt placing of the patient amid suitable environment, will in the majority of instances, ensure a successful result. Try New Mexico.

Dr. C. P. Ambler, Asheville, N. C.—I have but a few words to add. I do not want the impression left that I depended on serum in the large number of cases I reported. I did not give serum the preference. In the early stages bacilli are not found in the sputum. There was a time, and not many years ago, when we recognized tuberculosis by finding bacilli in the sputum, and we called *that* the early stage of tuberculosis. I think that time has passed. If we are now going to make a diagnosis only by the presence of bacilli in the sputum, we are going to fail in the treatment of a great may cases. The diagnosis is not difficult. Another means, not absolute, yet considered fairly certain, is the temperature record, taken, not once or twice a day, but once every two or three hours for days. If the temperature is 1 or 1.5 degrees higher at night, find out why this variation in temperature exists. Again, do not try to examine patients through three or four thicknesses of clothing. Fully three-fifths of our patients have not been examined; the women will not allow it and the doctor fails to make thorough examination. Examine your cases carefully. Make a temperature record, and learn if there is any variation. If there is any consolidation at the apex, find out what it means. If you find a slight consolidation and a temperature record that varies, with a family history bad, do not put your patient on treatment for malaria.

I believe that climate means fresh air and sunshine. Many cases we can not send to North Carolina or Colorado; but we can give our patients fresh air and sunshine. The good results obtained by climatic change are often due to the fact that the patient is away from his work, resulting in less overexertion and less exhaustion.

Dr. A. Mansfield Holmes, Denver, Colo.—The question of serumtherapy is one which is attracting the attention of the profession. In my experience with this treatment, covering a period of two years, I have been gratified with the results obtained, especially in the early stage cases. I wish to state, however, that all other means of treatment should be used in conjunction, as climatic, hygienic, aids to nutrition, lung gymnastics, etc. It is a well-recognized fact that results must eventually decide the merits of any treatment.

Dr. A. F. Lemke, Chicago—Dr. Murphy's method of treatment may do good by diminution of nutrition by compression. A certain physician quoted in my paper believes that the compression of the lung produces hyperemia and edema of the lung, which are inimical to tuberculosis. This calls to mind the fact that tuberculous patients who develop mitral stenosis are said, frequently, to show a marked tendency to a healing of the tuberculous lungs. I believe that compression of the lung tends to produce anemia of the organ and favor the growth of connective tissue. Healthy tissues are protected because the avenues of infection are cut off. The diseased areas are in an anemic state as a result of the compression, and this enhances the development of fibrosis and cicatrization.

I am glad to hear so much about climate. Every method of treating tuberculosis may have its advantages. Dr. S. A. Knopf, New York City, claims that climate at home is as good as climate at a distance. He believes that patients, when treated at home recover from the disease, there is less tendency to a recurrence than is the case when the cure is affected in a distant climate.

No one doubts that serumtherapy is to be looked on with hope. I employ all methods of treatment so far as applicable to individual cases. The medicine I consider of greatest value, is cod-liver oil, which certainly is used extensively and probably gives more satisfactory results than any other medicinal remedy. The pleural cavity may be filled with nitrogen, air, or any innocuous substance. We use nitrogen because it is retained longer. When two quarts or more of the gas are injected into a pleural cavity, the lung will be compressed from three to four weeks and sometimes longer. After the first or second injection the absorption goes on even more slowly.

Therapeutics.

Pruritus.

The external treatment of pruritus is of great importance, and indeed essential, in all cases. As a rule, lotions are most satisfactory, although in some patients the itching seems to be due to a lack of oiliness of the skin, and in this latter class ointments, even of an extremely negative character, often give relief. The most commonly prescribed local remedial agent is carbolic acid; this is usually applied in the form of a lotion, as follows:

R.	Acidi carbolici	3i-3iii
	Glycerini	3ii
	Alcohol	3i
	Aquæ, q. s. ad	Oi

M.

Or, and more especially in the local varieties of pruritus, with an ointment or oil, from 5 to 20 grains to the ounce of petrolatum or rose-water ointment or liquid petrolatum. Thymol is another valuable application, used as an ointment, from 5 to 20 grains to the ounce, or as a lotion, from 16 to 32 grains to the pint of water, with sufficient alcohol and glycerin for its solution. Resorcin is also valuable as a wash, from 5 to 20

grains to the ounce, with a few minims of glycerin and alcohol. Liquor carbonis detergens, with from 3 to 20 parts of water; and liquor picis alkalinus, from 1 to 3 drams to the pint of water, are both of service in some cases. Alkaline baths, with from 1 to 4 ounces of sodium carbonate, bicarbonate or biborate to 30 gallons of water, in which the patient lies for from ten to thirty minutes, are not infrequently useful; after the bath the patient taps the skin dry with a soft towel, and applies a small quantity of solid or liquid petrolatum, plain or medicated as may seem to be demanded; following this a dusting powder of starch, daily or every two or three days. In place of the bath, alkaline lotions containing one of the several alkalies named, of the strength of from ½ grain to 2 grains to the ounce may be used, also to be followed up with an oily application. A compound lotion, such as the following, although smacking strongly of polypharmacy, has acted well in some cases.

℞. Acidi carbolici ..... ʒii
Thymol ..... gr. xvi
Resorcini ..... ʒii
Sodii biboratis ..... ʒss
Glycerini ..... ʒii
Alcohol ..... ʒii
Aquæ, q. s., ad ..... Oi

In some instances acid lotions seem to act well, consisting of 1 part of ordinary vinegar to 5 or 10 parts of water, or of acetic acid 1 part to from 10 to 20 parts of water. In other cases the free use of a dusting-powder alone seems to protect the skin from the air, and in this manner probably gives relief; these applications may also be used as supplementary to lotions.—*Henry W. Stelwagon, in "An American Text-Book of Therapeutics."*

Influenza.

The catarrhal element of influenza is very constant. Catarrh of the nasal, buccal, pharyngeal, and laryngeal mucous membrane in most cases requires no special attention. The supra-orbital pain so often resulting from catarrh extending to the frontal sinus, it is said, may promptly be relieved by pencilling the nasal mucous membrane with a 5 or 10 per cent. solution of cocain. For acute catarrhal pharyngitis, gargles, sprays, and washes containing borax, boric acid, potassium chlorate, etc., are most useful; for example:

℞. Acidi carbolici ..... gr. xii
Sodii boratis ..... ʒii
Sodii bicarbonatis ..... ʒi
Glycerini ..... ʒss
Aquæ rosæ, q.s. ad ..... ʒviii
M. Sig. Use as a gargle, spray or wash.

INFLUENZA WITH BRONCHIAL CATARRH.

The bronchial catarrh—which, however, may be absent—demands simple treatment medicinally. As a rule, cough syrups are inadvisable, as they tend to nauseate and to increase anorexia. A simple syrup that may prove useful is the following:

℞. Morphinæ sulphatis ..... gr. ss
Syrupi scillæ ..... ʒii
Syrupi lactucarii ..... ʒss
Aquæ ..... ʒvi
M. Sig. A teaspoonful every second, third or fourth hour.

WITH SEVERE BRONCHITIS.

When bronchitis is pronounced, more stimulating agents will be required. Ammonium chlorid in varying combination will act with much advantage; thus:

℞. Ammonii chloridi ..... ʒi
Misturæ glycyrrhizæ comp ..... ʒvi
M. Sig. A tablespoonful every third or fourth hour.

Counterirritation should always be practiced. Sinapisms applied over many areas are useful, but the best results are afforded by turpentin, applied as stupes or, warm, upon flannel. Blistering can hardly be required. In most cases of influenza the bronchitis is mild and does not involve the smallest bronchial tubes.—*I. E. Atkinson in "Wilson's Text-Book of Applied Therapeutics."*

INFLUENZA WITH NAUSEA.

If nausea be present and cough troublesome, but the bronchitis not severe, the following combination is often effective:

℞. Morphinæ sulphatis ..... gr. ss
Acidi hydrocyanici diluti ..... m. viii
Spiritus chloroformi ..... ʒiss
Aquæ menthæ virid, ad ..... ʒiss
M. Sig. A teaspoonful every third or fourth hour.

Cinnamic Acid in Tuberculosis.

S. Bernheim, in a communication to a recent congress, confirmed the efficacy of sodium cinnamate in tuberculous affections announced by Prof. A. Landerer of Stuttgart, as reported in the JOURNAL of February 18, 1899, p. 370. He also confirmed the mechanism of its action, the hyperleucocytosis, increase in polynuclear leucocytes and eosinophiles and the inflammatory process around the tuberculous foci, terminating in the production of connective tissue. The results in 284 observations during several years prove that cinnamic acid and its derivatives are capable of energetically influencing tuberculosis, while perfectly harmless. This action can be followed *de visu* in the surgical forms. He advises commencing with injections of a tenth of a milligram, increasing gradually to fifty milligrams.

Inconveniences of Orthoform.

Six new cases have recently been added to the two on record, in which the application of orthoform to an ulcer on the leg aggravated the morbid process and led to gangrene, only arrested by suspending the drug. It is curious that this result has been experienced only with ulcers of the leg; the orthoform probably combines with the alkaline secretions of the lesion to form a toxic compound. Another disadvantage signalled is that as the orthoform arrests the pain, the subjects are satisfied and do not try to heal the ulcer, grudging the necessary repose. In one case the subject knowingly aggravated the lesion by the constant application of orthoform to prevent pain. Daily changing of the dressings moistened with a solution of boric acid and removing all vestiges of powder from the last application, is Luxenburger's method of using orthoform, and he has found it invariably effective and harmless in over three hundred cases treated, among them an amputation for senile gangrene, which healed under orthoform without the necrosis of any portion of the skin flap.

To Prevent Intoxication From Extractum Filicis Maris Aethereum.

Professor Grawitz has observed a number of cases of icterus, gastro-intestinal catarrh, renal and liver troubles consecutive to the use of this remedy for tapeworm, and, in a communication to the *Muench. Med. Woch.*, of September 18, warns against its use by anemic persons, or when any special organ is affected, as predisposing to intoxication. The twenty-gram doses of old days have been abandoned and eight to ten grams for adults and half this for children over 6 years is now the usual dose. It should never be administered with oil as a vehicle or purgative, as the oil favors its absorption. Grawitz also advises against "preparing the patient" by reducing the amount of food and taking the extract on an empty stomach. The morning of the cure the patient takes Carlsbad or sulphate of magnesia, and, after it has operated, the remedy is taken with coffee. He has had a hundred consecutive cases without a single accident, and negative results have been extremely rare.

Snuff in Acute Coryza.

℞. Bismuthi subnitratis ..... ʒi
Pulv. camphoræ ..... gr. x
Pulv. acidi borici ..... gr. xxx
Morphinæ hydrochloratis ..... gr. i
Cocainæ hydrochloratis ..... gr. i
Pulv. benzoin ..... gr. xv
M. Great care should be taken in the administration of this snuff, since its frequent use may easily induce the cocain habit.
—*Capitan.*

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Journal of Nervous and Mental Diseases, October.

1.—*Facial Paralysis, Congenital, Unilateral, and Unique Distribution. F. W. Laugdon.
2.—*Case of Cerebral Hemorrhagic Pachymeningitis with Pseudobulbar Palsy. Chas. W. Burr and D. J. McCarthy.
3.—*Sensorimotor Palsies of Musculature of Face, with Remarks on Ocular Palsies of Early Stages of Tabes. Joseph Fraenkel.

Bulletin of the American Academy of Medicine (Easton, Pa.), October.

4.—*A Profitable Medical Education. Henry O. Walker.
5.— Elective System in Medical Education. John M. Dodson.
6.— Medical Education in the South. G. C. Savage.

Post-Graduate (N. Y.), October.

7.— Food Value of Vitos Compared with Wheat Bread. William H. Porter.
8.—Surgical Notes. Theodore Dunham.

Chicago Clinic, September.

9.— Cesarean Section. A. S. Waiss.
10.— Management of Placenta Previa, with Report of Cases. F. B. Earle.
11.— Epilepsy in its Forensic Aspect. Albrecht Heym.
12.— Some Reflections on Varicose Veins. W. T. Eckley.
13.— Streptococcus Infection Following Lobar Pneumonia. Cassius C. Rogers.
14.—*Post-Operative Treatment of Hemorrhoids. J. R. Pennington.
15.— Treatment of Constipation. Jos. M. Matthews.

University Medical Magazine (Philadelphia), October.

16.— A Case of Unilateral Ophthalmoplegia. James Hendrie Lloyd.
17.—*Diagnosis of Mitral Stenosis. A. A. Stevens.
18.— Case of Myelitis Following Influenza. Chas. S. Potts.
19.— Technic of Operation of Celiotomy as Practised at the University Hospital, and Report of 137 Consecutive Celiotomies Performed at the University and Gynecean Hospitals, with Three Deaths. Henry D. Beyea.
20.—*Clinical Estimation of Quantity of Hemoglobin in Human Blood. Thomas J. Yarrow, Jr., and Arthur P. Hitchens.

St. Louis Clinque, October.

21.— Progress of Medicine and Surgery in the Last Decade. W. S. Wiatt.
22.— Progress in Chemistry. C. W. Lillie.
23.— Constipation. G. Howard Thompson.

Medical Bulletin (Philadelphia), October.

24.— Lupus Vulgaris. John V. Shoemaker.
25.— Primary Tuberculous Periostitis of the Margin of the Orbit. C. Mazet.
26.— The Paranoia of Pubescence, or Hebephrenia, with Report of a Case. H. Brooker Mills.

Bulletin of Cleveland General Hospital, July.

27.— Case of Glanders. Martin Friedrich.
28.—*Albuminuria of Pregnancy, with Report of Cases. R. E. Skeel.
29.—*Original Method of Preserving Tissues Whereby the Natural Color is Retained. Frederick Y. Allen.
30.— Three Interesting Cases of Malignant Disease. Morris D. Stepp.
31.— Palliative Treatment of Carcinoma of Cervix Uteri, with Report of Two Cases. Lillian G Towslee.
32.—*Frontal Sinusitis and Otitis Media Complicating Influenza. Norman C. Yarian.
33.— Uses and Dangers of Atropin in Treatment of Diseases of the Eye. Edward S. Lauder.

Canadian Practitioner and Review (Toronto, October.

34.— Infant Feeding and Infantile Diarrhea. J. T. Fotheringham.
35.— The Politzer and Gruber Clinics. John P. Morton.

Denver Medical Times, October.

36.—*Experience with the Bottini Operation in Hypertrophy of the Prostate. Leonard Freeman.
37.— Hemoglobinuria: Report of Two Cases: Recovery; Remarks on Treatment. Lewis B. Brasher.
38.—*Hemophilia, with Report of Two Cases. A. A. Kerr.
39.—*Treatment of Acute Conjunctivitis. Edward Jackson.
40.—*Some Valuable Points in Eye Work. Robert F. LeMond.
41.—*Ocular Prothesis. Melville Black.
42.—*Hydatidiform Mole. Sol G. Kahn.

Medicine (Detroit, Mich.), October.

43.—*Drugs in Cardiac Insufficiency. O. T. Osborne.
44.— Penetrating Wounds of the Chest. J. B. Murfree.
45.—*New Departure in Medical Society Work: The Pathologic Department of the Indiana State Medical Society. Frank B. Wynn.
46.—*Ectopic Pregnancy. J. W. Long.
47.—*Etiology of Eclampsia. Charles B. Reed.

Texas Medical News (Austin), October.

48.— Some Recent Cases of Appendicitis. T. J. Bennett.

Memphis Medical Monthly, October.

49.— Present Status of Medicine. Clinical Experience vs. Laboratory Research. Frank A. Jones.
50.— Remarkable Case of Autohypnosis. E. H. Martin.
51.— Neurasthenia. Frank B. Turner.
52.— Welcher's Position with Report of Case. Alfred Moore.
53.— Case of Disseminated Insular Sclerosis. Wm. Krauss.
54.— Case of Chronic Gleet of Seven Years' Standing Cured in Two Weeks by Injection of Potassium Permanganate. Edwin Williams.
55.— Phantom Tumor. Louise Drouillard.

Archives of Ophthalmology (N. Y.), September.

56.—*Eye Strain in Its Relation to the Vertical Centration of Lenses. Burton L. Dunn.
57.— Some Aids in Ophthalmic Teaching. F. Dimmer.
58.—*The Question as to the Presence of Ganglion Cells in the Iris. N. Androgsky.
59.— Suppurative Keratitis. A. Schultz.
60.—*Changes in the Eye after Ligation of the Gall-Bladder (an Experimental Contribution to the Knowledge of Ophthalmia Hepatica). W. Dolganoff.
61.— Contribution to the Subject of Tuberculosis of the Conjunctiva. Carl Grunert.
62.—*Experiences and Studies with Regard to Strabismus. Ph. Steffan.

Medical Dial (Minneapolis, Minn.), October.

63.—*Arm Saved After being Run Over and Crushed by a Railway Locomotive. S. L. Kilmer.
64.— Fibroma Molluscum. F. J. Leviseur.
65.— Myasthenia Gastrica. John W. Bell.
66.— Treatment of Cancer by Cataphoric Diffusion of Oxychlorids of Mercury and Zinc: the Massey Method. G. Betton Massey.
67.— Tetanus and Tetanus Serum, Report of Case. Edward Newton Flint.
68.— Legal Responsibility of Physician in Certain Cases. F. F. Casseday.
69.— Differential Diagnosis of Smallpox, Chickenpox and Measles. G. R. Curran.

Medical and Surgical Bulletin (Nashville, Tenn.), September.

70.— Neurasthenia. K. S. Howlett.
71.— Treatment of Chronic Tubercular Pulmonary Consumption. O. C. Smith.
72.— Two Cases of Perrineorraphy. L. W. Spradling.

Fort Wayne Medical Journal-Magazine, September.

73.— On Certain Diseases Not Due to Autotoxication from the Intestine. B. VanSweringer.

Atlanta Journal-Record of Medicine, October.

74.— Pathology of Fever. J. Clarence Johnson.
75.— Climatology and Sanitation. T. S. Hopkins.
76 — Appendicitis. Hugh F. Lorimer.
77.— Report of Three Surgical Cases, with Comments. E. C. Davis.
78 — Penetrating Wounds of the Eye. A. Bethune Patterson.
79.— Report of Two Cases of Typhoid Fever. J. M. McClanahan.
80.— Suspension of Uterus by Intramural Shortening of Round Ligaments. George H. Noble.

Laryngoscope (St. Louis, Mo.), October.

81.— Endocranial Complications of Otic Origin. Two Cases of Cerebral Abscess. E. J. Moure.
82.— Adenosarcoma of Nasal Septum. Albert Rufus Baker.
83.— A Remarkable Accident. J. W. Bird.
84.—*Some Consequences of Singers' Nodes. A. Rosenberg.
85.— Interesting Case of Fatal Dyspnea in a Child. Samuel E. Allen.

Indiana Medical Journal (Indianapolis), October.

86.— Appendicitis. Robert T. Morris.
87.— Significance of Lacerations of Cervix Uteri. H. O. Pantzer.
88.— The Doctor and Literature. A. W. Brayton.

Medical Mirror (St. Louis, Mo.), October.

89.—*A Profitable Medical Education. Henry O. Walker.
90.— The Forms and Treatment of Chronic Rhinitis. R. C. Kenner.
91.— Sanguiferrin in Chlorosis. W. C. Abbott.
92.— La Grippe: Its Manifestations, Complications and Treatment. W. W. Grube.

Western Clinical Recorder (Chicago), September.

93.— Anthrax Affecting Man. Fred Jenner Hodges and Wm. T. Rinehart.
94.—*Practical Value of Determination of Indicanuria. H. Gideon Wells.
95.— Five Hundred and Fifty Surgical Operations Without Alcohol. Chas. Gilbert Davis.

New York Lancet, September.

96.— Infectious Jaundice. W. H. Washburn.
97.— Superficial Treatment of Deep Diseases. W. H. Dickinson.
98.— Diagnosis of Scarlet Fever. M. Foord Caiger.
99.— Case of Strumpell's Paralysis Combined with Infantile Paralysis. E. C. Williams.
100.— Operating for Umbilical Hernia, whether for Radical Cure or when Strangulation has Occurred. Howard Marsh.
101.— Double Pneumonia in Sixth Month of Pregnancy; Miscarriage; Relapse; Recovery. Thomas Oliver.
102.— Extrauterine (One Tubal, One Ovarian) Gestation with Rupture before end of First Month. Hastings Gilford.
103.— Cases of Intractable Uterine Hemorrhage for which Vaginal Hysterectomy was Performed. C. E. Purslow.

Journal of Tuberculosis (Asheville N. C.), October.

104.—*Widal Reaction in Tuberculosis. S. H. von Ruck.
105.—*Immunity as Against Heredity in Tuberculosis. Lawrence F. Flick.
106.— Diagnosis of Tuberculosis. W. H. DeWitt.
107.—*Tuberculosis Crusade and Its Problems. Chas. Denison.
108.—*Pulmonary Consumption and Tuberculosis. Ch. Baeumler.

Cleveland Medical Gazette, September.

109.— Progress of Abdominal Section from 1771 to 1899. Lillian G. Towslee.
110.— New Remedies. J. F. Purviance.
111.— Report of Case of Unilateral Diffuse Hypertrophy of Breast. Frank E. Bunts.
112.— Case of Sinus Thrombosis. Albert Rufus Baker.
113.— Puerperal Hematoma. J. D. Lower.

Iowa Medical Journal (Des Moines, Iowa), October.

114.— Report on Gynecology. J. R. Guthrie.
115.— Expert Testimony. Charles Egan.
116.— Abdominal Aneurysm. W. M. Besore.
117.— Horse Sense in the Practice of Obstetrics. W. W. Eastburn.

Pacific Medical Journal (San Francisco, Cal.), October.

118.—Factor in Successful Result of Operations for Strabismus. Louis Chas. Deane.
119.—*Pathelesia. C. F. Bulkley.
120.—Starchy Indigestion and Value of Malt Preparations Therein. A. W. Perry.
121.—Pathology. J. L. Asay.

Journal of Mississippi State Medical Association (Biloxi), October.

122.—Arteriovenous Aneurysm Removed from Scarpa's Triangle. M. J. Lowry.
123.—Notes from Practice. A. C. Halbert.
124.—Circumcision. W. W. Robertson.
125.—*Some Facts about Yellow Fever. H. M. Folkes.
126.—History and Treatment of Three Cases. John Darrington.
127.—Irregular Menstruation in Young Women Due to Anemic Conditions. H. Edwin Lewis.

Pediatrics (N. Y.), October 15.

128.—*Observations on Morbid Anatomy of Tuberculosis in Childhood. George F. Still.
129.—*Remarks on Tuberculous Adenitis. George Morgan.
130.—*Causation of Night Terrors. E. Graham Little.
131.—Operation for Relief of Contraction of Forearm and Hand Following Infantile Hemiplegia. A. H. Tubby.
132.—Notes on Treatment of Rickets in an Out Patient Department. E. Mansel Sympson.

North Carolina Medical Journal (Charlotte), October 5.

133.—Fractures of Skull. J. Garland Sherrill.
134.—Report of Case of Elephantiasis. Albert Anderson.
135.—Treatment of Gonorrhœa, with Clinical Reports. Robert C. Kenner.
136.—Chicken Bones and Other Foreign Bodies in the Rectum. K. G. Averitt.

Columbus Medical Journal, September 25.

137.—Cerebrospinal Meningitis, with Report of a Case. Benson E. Sager.
138.—Treatment of Uterine Hemorrhage without Neoplasms or Pregnancy. John Inglis.
139.—Historic Sketch of Medical Colleges of Columbus. James U. Barnhill.

Medical Age (Detroit, Mich.), October 10.

140.—*Mastoid Complications in Acute Otitis Media. Samuel G. Dabney.
141.—*Importance of Early Treatment of Insanity. Moses J. White.
142.—*Surgical Treatment of Internal Hemorrhoids. Wm. F. Metcalf.

New York Medical Journal, October 21.

143.—*Very Early Rupture in an Ectopic Gestation in a Tubal Diverticulum. Fernand Henrotin and Maximilian Herzog.
144.—*Report of Two Cases of Accessory Thyreoid Gland at Base of Tongue. Arthur W. Watson.
145.—*Cause of Death from Industrial Electric Currents. R. H. Cunningham.
146.—*Surgical Diseases of the Kidneys: Cases Illustrating some Points in Diagnosis and Treatment. Leonard Freeman.
147.—*Effect of Atmospheric Changes on the Hearing in Chronic Catarrhal Otitis Media. Seymour Oppenheimer.
148.—*Clinical Note on Connection between Asthma and Eczema. H. Neville Taylor.
149.—*Treatment of Follicular and Suppurative Amygdalitis and the Angina of Scarlet Fever by Injection of a Solution of Carbolic Acid. H. Judson Lipes.

Medical News (N. Y.), October 21.

150.—*Arid Region of the United States for Pulmonary Tuberculosis. J. O. Cobb.
151.—*Steatosis of Liver and Coagulation Necrosis; a Further Contribution to the Yellow Fever Discussion. Felix Vitale.
152.—*Beta-Eucain as an Anesthetic in Eye, Nose and Throat Work. William H. Poole.
153.—Three Interesting Heart Cases. Charles Ross Jackson.

Boston Medical and Surgical Journal, October 19.

154.—*Acute Abdominal Symptoms Demanding Immediate Surgical Intervention. Maurice H. Richardson.
155.—*Treatment of Cerebral Tumors. Philip Coombs Knapp.
156.—Case of Hemorrhagic Pleurisy; Permanent Drainage; Recovery. George G. Sears.
157.—*Gastric Ulcer at Massachusetts General Hospital, 1888 to 1898. Robert B. Greenough and Elliott P. Joslin.

Medical Review (St. Louis, Mo.), October 21.

158.—*Treatment of Pulmonary Tuberculosis by the Inhalation of Antiseptic Nebulæ. Homer M. Thomas.
159.—A Notorious Quack of the Time of Charles II of England. G. R. Highsmith.

Philadelphia Medical Journal, October 21.

160.—Medical Education. Charles W. Burr.
161.—*How Far Has Specialism Benefited the Ordinary Practice of Medicine? L. Duncan Bulkley.
162.—*The Contagiousness of Inherited Syphilis. J. Henry C. Simes.
163.—Clinical Cases and Interesting Ideas. Samuel F. Brothers.
164.—*A New Intestinal Anastomosis Forceps. Angus McLean.

Medical Record (N. Y.), October 21.

165.—*Early Diagnosis of Cancer of the Stomach. John C. Hemmeter.
166.—*Paralysis Following General Anesthesia. William M. Leszynsky.
167.—Psychologic Study of Jurors. T. D. Crothers.
168.—*Renal Casts: Their Significance and Detection. Jo. H. Linsley.

Cincinnati Lancet-Clinic, October 21.

169.—*Association of Hysteria with Organic Disease of the Nervous System. Philip Zenner.
170.—*Report of Two Cases of Intestinal Obstruction. C. M. Paul.
171.—Clinical Notes. G. L. Bailey.

Maryland Medical Journal (Baltimore), October 21.

172.—*Notes on Treatment of Typhoid Fever, and Special Indications for Use of Copper Arsenite in this Disease. Louis Kolipinski.
173.—*The Mercurial Vapor Bath. Henry Alfred Robbins.

AMERICAN.

1. **Facial Paralysis.**—Langdon reports a case of facial paralysis, apparently existing from birth, and of an unusual type, involving to some extent the sixth, ninth, and possibly the twelfth pairs of nerves as well as the seventh. The case is given in detail, with illustrations. Considering the fact that an isolated, unilateral, congenital, facial paralysis is a rarity, and is even stated by Bernhardt to be undemonstrated, he offers this case—accepting the history—as unique in the etiology as well as the distribution. In the discussion, Dr. H. M. Thomas suggests the possibility of the lesions occurring at birth. Dr. Langdon remarked that the patient had been an attendant in asylums and had been seen repeatedly by neurologists, and his peculiar condition had not been particularly noticed.

2. **Cerebral Hemorrhagic Pachymeningitis.**—Burr and McCarthy detail a case of cerebral pachymeningitis with autopsy. Alcoholism was apparently the cause. During the course of the disease a pseudobulbar paralysis developed. They conclude their paper with the following: 1. Hemorrhagic pachymeningitis should not be forgotten as a possible cause of epileptiform fits beginning in adults. 2. The condition may sometimes at least be inflammatory in origin. 3. Alcohol and tuberculosis are both causes. 4. A pseudobulbar palsy may develop in the course of the disease.

3. **Sensorimotor Palsies.**—Fraenkel attempts to reply to the following questions: 1. What, if any, is the effect of disease of the fifth nerve on the motility of the face? 2. Which, if any, function of the fifth nerve is it in particular that is indispensable for perfect motility of the face? 3. The fifth nerve carrying deep sensibility to the ocular musculature as well as to the facial, what, if any, is the effect of disease of the fifth nerve on the motility of the former? 4. How are we to clinically determine the state of deep sensibility of the facial and ocular musculature? 5. Are not some of the ocular palsies observed in the early stages of tabes sensorimotor paralyses and not primarily motor? For the solution of these questions the following methods were employed: 1. Study of a case with a rather fortunate grouping of the symptoms. 2. Study of the physiologic, clinical and anatomic literature at his disposal. 3. Analysis of twenty-two cases of tabes, at present under observation, with regard to the relation between disordered function of the facial and oculomotor nerves and disease of the fifth nerve. The case used was apparently one of tabes with extensive disease of the fifth nerve, motor impairment of facial and ocular musculature, especially of the left side, due rather to inco-ordination than to actual paralysis. There was disordered sensibility in the distribution of the fifth nerve on the same side, with atrophic symptoms. The subject is reviewed at length, and an analysis of twenty-two cases observed is given. The answers to the questions formulated in the beginning are offered as follows: 1. Disease of the fifth nerve interferes with the motility of the face. 2. As yet no function of the trigeminal in particular can be ascertained, which could justly be supposed to be the cause of the impaired motility; the kinesthetic sensibility, when cautiously and patiently examined, was found more frequently and more extensively disordered than the other functions. 3. The effect of disease of the fifth nerve on the motility of the eyes seems to be a similar one. 4. All the means at present at our command for examining the deep sensibility of the facial and ocular musculature are not very exact. It is particularly difficult to ascertain slight disorder. The procedure described above—examination of the deep sensibility of the eyelids—gives a fair impression of the deep sensibility of the levator palpebræ, and no method is apparently known for determining the kinesthetic sensibility of the other external eye muscles. 5. Some of the ocular palsies of tabes are probably sensorimotor palsies.

4.—This paper appeared in the JOURNAL of September 16.

14.—See JOURNAL, May 13, p. 1061.

17. **Mitral Stenosis.**—Stevens describes the symptoms, or rather the physical signs, of mitral stenosis, and calls attention to the variations from the usually accepted typical sounds.

He especially notices the accentuation of the first sound of the heart in this condition, which may lead to the mistake of calling a diastolic bruit a systolic one. He is inclined to consider this loud and abrupt rapping into which the presystolic murmur merges as one of the most characteristic features of mitral stenosis. The presystolic murmur, which is usually considered characteristic, is variable and has a tendency to disappear in certain cases, and can no longer be regarded as pathognomonic as it has been found in at least five other conditions, viz., aortic regurgitation, adherent pericardium, simple dilatation of the left ventricle, aneurysm of the heart and anemia. While present at some period in nearly every case, it is not peculiar. There is also a false thrill sometimes felt, probably due to the pulsation of the chest walls being interrupted by the rigid ribs.

20. **Hemoglobin.**—The authors of this article have tested the various instruments used for detecting the proportion of hemoglobin in the blood and give accounts of their findings. They believe that the tintometer of Oliver is the most accurate clinical instrument for this purpose, but its expense is against it. The specific gravity method will answer all purposes for those who can not afford the tintometer. To those who are accustomed to the use of the spectroscope, they suggest the use of Hanocque's hematoscope, which is useful also in examining for all pathologic fluids in the urine. Von Fleischl's and Gower's instruments are not suitable for accurate estimates.

28. **Albuminuria in Pregnancy.**—Four cases are here reported by Skeel, from which, admitting their limited number, the following ideas are suggested: 1. Some of the bad results of the renal lesions of pregnancy, which give rise to albuminuria, can be obviated by treatment begun early and continued persistently, the treatment being practically the same as in acute and subacute nephritis. 2. Epigastric pain in a pregnant woman, the subject of albuminuria, is an extremely serious symptom and deserving of most careful attention. 3. Morphin, in one or two moderately large doses during convulsion, chloroform, venesection and veratrum should be given a trial in the ordinary case of eclampsia, without resorting to immediate delivery unless labor is already in progress. 4. Unless prompt improvement follows these measures delivery should be accomplished under deep anesthesia in the shortest time possible without doing violence to the maternal soft parts.

29. **Method of Tissue Preservation.**—The method here described, which is not claimed to be entirely new, but is modified from other formulas and processes so that some claim of originality is to be justified, is as follows:

Preparation.—The organ is first placed in running water until it is free from all blood stains and foreign material, as pus, necrosed tissue and detached epithelial elements. It is then placed in position for fixing, i. e., the important details of the tissue should be most advantageously placed for inspection and indicated if possible by a toothpick or probe. Shrinkage must be avoided also as much as possible to prevent obliteration of the most minute blood channels. To this end a closed sac is inflated with air and the tissue, lying in one plane, is stretched upon pasteboard or splint-wood and fastened with brass tacks. Ordinary tacks will rust, thereby discoloring the tissues and spoiling the solutions.

Fixing.—The solution is formalin, an aqueous solution of formaldehyde at 40 per cent., which toughens and discolors the tissues. At the end of twenty-four hours the piece is transferred to alcohol, a 50 per cent. solution, for three hours, then put into a 96 per cent. solution of alcohol for five hours at a temperature of 95 F. In this bath the organs recover their previous coloring and the blood becomes tinted as if the vessels had been freshly filled. The piece is then placed in an aqueous glycerin solution of potassium acetate—acetate 30, glycerin 60 and distilled water 100. In this the color becomes permanently set.

Mounting.—After this the specimen may be permanently mounted in glycerin jelly or placed in a preserving fluid if it is of good size. The preserving fluid is made by boiling together 50 grams of gelatin and 300 grams of water, to which add 175 c.c. of solution of potassium acetate; filter this preparation through a double filter, add 300 c.c. of glycerin and the process is complete.

32. **Frontal Sinusitis and Otitis in Influenza.**—Varian here reports a case of inflammation in the frontal sinus, associated with otitis media following influenza. It was relieved by leeches, sedatives, etc., without operation, but its points special interest were the severity of the subjective symptoms, with a slight disturbance of temperature and pulse, the persistence of the pain after rupture of the tympanic membrane and the hemorrhagic nature of the otitis (both of which last named are frequent with otitis from influenza), the severe symptoms pointing to thrombosis of the lateral sinus or at least mastoid inflammation, and their final subsidence without even a discharge from the right ear.

36.—See abstract in JOURNAL, August 19, p. 481.

38.—Ibid, August 12, p. 413.

39.—Ibid, August 19, p. 481.

40.—Ibid.

41.—Ibid.

42.—Ibid, August 12, p. 413.

43. **Cardiac Insufficiency.**—After describing the symptoms and conditions common in attacks of cardiac insufficiency, Osborne discusses the drugs to be used in this condition. Morphin, while useful, may impair the action of the respiratory centers, but with the addition of atropin is the correct physiologic remedy. To give the proper tone to the arterial system, which is required, nitroglycerin, either 1/200 of a grain hypodermically or, better, the same amount by the mouth at short intervals until frontal throbbing is complained of, will generally obviate the necessity of venesection. In case the natural resolution of the cardiac paroxysm does not occur, but cardiac dilatation, edema and passive congestion of the lungs or other symptoms of cardiac insufficiency show themselves, we must help the heart directly, and here digitalis is the best cardiac tonic. Digitalin is the best form for hypodermic use, and he advises the dose be from 1/100 to 1/50 of a grain. We must not forget to keep the patient in a recumbent position absolutely until the profound effects have passed off, which may not be for a number of hours. If, after stoppage of the paroxysm, we have cardiac exhaustion, as shown by pallor, pinched nose, intermittent pulse, etc., we must use stimulants, strychnin, camphor, and probably alcohol, though he admits that he is afraid of the latter in bad cardiac cases. Other drugs mentioned to be used in the after-treatment are cactus, strophanthus, spartein and caffein. In cases without valvular lesions due to narcosis or shock, if there has been hemorrhage, transfusion of saline solution is the first remedy, and he recommends the giving of high injections per rectum as routine practice after any severe prolonged operation. Heat to the extremities and heart, and elevation of the feet to aid in the return of the blood to the veins, etc., are also mentioned. He believes that we have more frequent cases of sudden or chronically weak heart than formerly, for which no assignable cause can be given. The chronically weak heart without valvular lesions is best treated by strychnin and small doses of digitalis and cactus. As stimulants, camphor and ammonia are better than whisky or coffee. Careful regulation of life and habits, and removal from nervous causes of exhaustion are advisable.

45. **Pathology and Medical Societies.**—Wynn describes the pathologic department of the Indiana State Medical Society, which he holds is an important advance in medical society work.

46.—This article appeared elsewhere; see title 93, JOURNAL, September 9, title 93, p. 656; also August 26, titles 54 and 87, p. 532; also July 22, title 40, p. 214.

47.—This article was published in full in the JOURNAL of June 24.

56. **Eye Strain.**—Dunn maintains that decentration of the lenses downward to the reading point is the most effective method of correction of the refractive errors caused by eye strain, and reports three cases of astigmatic and prismatic errors thus caused and relieved. He says: "It would seem from a study of these cases that the ordinary method of lens centration tends to give rise to a class of pseudo-insufficiencies which complicate the already difficult problem of muscle-balance. The whole matter of the relation of the muscles to vertical prism-imbalance at the near point deserves still more study; and it is my hope that by calling attention to the possibility of such pseudo-insufficiencies, further work may bring out much which may prove of advantage to students of the ocular muscles."

58. **Ganglion Cells in the Iris.**—The following are the conclusions of Androgsky's article: 1. In the iris itself, i.e., in the course of its nerves and in the region of the sphincter, ganglion cells are entirely wanting; those who have described ganglion cells as existing here have mistaken for ganglion cells either the triangular nuclei or the nerve fibers, or the branched stroma cells of the iris. 2. Ganglionic structures in the form of bipolar and multipolar nerve cells are found only in the superficial nervous network of the ciliary process. As to the function of these ganglion cells—while it is possible that they belong to the motor nervous system of the iris, it is more probable that they belong especially to the ciliary processes, serving as a regulating center for the vessels and, consequently, for the secretion of the aqueous humor.

60. **Eye Changes After Ligation of Gall-Bladder.**—Dolganoff reports experiments on dogs, discusses the subject of changes in the eye after ligation of the bile-ducts, and deduces the following conclusions: 1. After ligation of the common bile-duct the coats of the eye undergo very pronounced changes of inflammatory and degenerative characters. 2. The changes are found in the stroma of the connective tissue, in the vascular system, and in the nervous elements. 3. The changes in the connective tissue consist in the proliferation of the nuclei. 4. The alterations in the vascular system comprise distension of the vessels, swelling of the endothelium, perivasculitis, enlargement of the spaces about the vessels, hemorrhages and exudations. 5. The affections of the nervous system consist in various degrees of degeneration of the protoplasm of the ganglion cells, alterations in the nuclei, and enlargement of the spaces about the cells. All these changes point to a distinct cause for their origin and development, and one can not consider them to be simply the expression of lowered general nutrition.

62. **Strabismus.**—The chief point made in Steffan's article is that strabismus can not be congenital, owing to the undeveloped condition of the eye at birth and for some time after before the nerve fibers obtain their sheaths and are capable of isolated conduction. He points out that the function of seeing is not perfect for several years after birth, and certainly not in the new-born infant. He quotes from Naumoff, as to the ophthalmoscopic findings of retinal hemorrhage in the new-born, and also suggests the abnormal development of the bones as affecting the optic apparatus. He does not recommend early treatment of strabismus, at least not until the patient's intelligence can co-operate in the treatment.

63.—See abstract in JOURNAL, October 21, p. 1041.

84. **Singers' Nodes.**—The cause of the pinhead nodes on the vocal cords of singers is, according to Rosenberg, in at least a large proportion of cases, obstruction of the outlets of the minute glands described by Fränkel some ten years ago, which open directly under the edge of the cord. He has observed another consequence in several women singers: After the subsidence of the nodes, there occurred a more diffuse broadening of the vocal cords in the entire region of the pars libera giving the edge of the vocal cord a shallow convex form. The enlargement, originally confined to the mouth of Fränkel's glands, now occupied the entire non-cartilaginous portion of the cord. After rest and local astringent medication the normal condition was restored. He does not know that this alteration has been elsewhere described, and, therefore, calls attention to it.

89.—See ¶ 4, above.

94. **Indicanuria.**—Wells holds that in certain cases, such as intestinal obstruction from strangulation within the abdominal cavity, volvulus and intussusception, the testing of the urine for indican may be of great value. In most other conditions the diagnosis can be made more quickly and equally satisfactorily by other symptoms.

104. **Widal Reaction in Tuberculosis.**—Von Ruck reports some sixty tests of blood from individuals suffering from typhoid, those free from typhoid and tuberculosis, tuberculous patients who have never had typhoid, and also from those who had. He finds that in tuberculous patients who have had typhoid within five or six years, there is a modified Widal reaction, and that in some cases this test will serve for differential diagnosis between tuberculosis and typhoid, as in cases of tuberculous patients who never had typhoid there is a sort of clumping of the germs, entirely different from that in typhoid. He sums up his conclusions as follows: 1. Inasmuch as with the blood of the tubercular patients who had never had typhoid fever, a modified reaction was obtained, and, as no reaction occurred with the blood of individuals free from tubercular affection and with no previous history of typhoid, it may not be unreasonable to presume that such change takes place in the blood of the former, not occurring in that of the latter, which in a manner exerts a certain degree of a protective influence against infection with the Eberth bacillus. 2. A true Widal reaction is not to be obtained with the blood of tubercular patients; but what may be termed a modified reaction does occur quite uniformly, the difference being one of time and degree only. 3. The modified reaction seen with the blood of persons suffering from tuberculosis in no way detracts from the value of the Widal reaction as applied in typhoid fever. However, the results shown should, in the use of this diagnostic means for typhoid, lead those to be cautious who are not familiar with what constitutes a true Widal reaction. 4. It has been demonstrated that a modified reaction takes place with the blood of tubercular subjects and the differences between this reaction and that obtained in typhoid fever have been pointed out. Again, it has been shown how very differently the blood of those affected with tuberculosis behaves—when brought in contact with the germ-containing fluid of a young Eberth culture—as compared with that of the healthy individual. Certainly each has its own characteristics which are not difficult to distinguish, if one observes at all carefully. The Widal reaction can and may be used for diagnostic purposes in tuberculosis. At least to obtain such a modified reaction when no history of previous typhoid existed, might lead to a suspicion of tuberculosis, if to nothing more. But with a past history of typhoid the question would necessarily remain undetermined; for some influence due to that disease undoubtedly persists to a greater or less degree and for a longer or shorter period of time.

105. **Immunity vs. Heredity in Tuberculosis.**—The question of immunity from tuberculosis is discussed by Flick at some length, and he maintains that the disease in time breeds a certain immunity and that when it occurs in those altogether free from tubercular antecedents it is likely to be more malignant and severe. He thinks that tuberculosis in certain tissues of the body, if recovery takes place, may set up an absolute immunity against future attacks, and reports as an example a case of a cripple from tuberculous caries of the spine who was necessarily prevented from the ordinary defenses against tuberculosis, of light, air and exercise, and yet who remained the only surviving member of his family who all died from tuberculous disease. In spite of the intense and constant exposure, he remained immune.

107. **Tuberculous Crusade and Its Problems.**—The paper by Dr. Denison is not capable of being abstracted in full within the limits here allowed. He proposes some forty-four different subjects for study in the fight against tuberculosis, and he suggests that there is possibly a mistake being made, or likely to be made, in endeavoring too much to ward off infection at the expense of attention to eradicating the degeneracy or predisposition.

108. See abstract in JOURNAL, June 17, p. 1385.

119. **Pathelesia.**—Buckley defends his newly-originated term against certain criticisms made on it in medicine. He maintains that it better directs attention to the nature of the disease than those heretofore used.

125. **Yellow Fever.**—According to Folkes yellow fever can be contracted twice or oftener, but in a very small percentage of cases, and a second attack may be as severe as the first. The germ, in his opinion, lives in a certain peculiar kind of mold, and while freezing will not destroy it, it stops the growth of its soil, and as this is essential to the life of the germ, it is also destroyed. Heat, moisture and dampness are essential conditions for the growth of the germ, and from ten days to two weeks is the time required to thoroughly infect a locality. He does not consider that we have any reliable evidence of its ever being carried from place to place, except by persons already sick or developing the disease, though clothing and bedding kept in a dark damp place may possibly convey the infection. He thinks there is not any satisfactory proof of its ever being carried by the physician. Its mortality has been

exaggerated in times past, and this has given rise to a greater fear of the disease than is at present justified. Since 1878 the mortality has been constantly on the decrease, only in exceptional localities being above 10 per cent. since 1853, and of late years not above 4 per cent. It must be remembered that official mortalities are, as a rule, two or three times too large, since all deaths are reported and not all cases. The disease is just as amenable to measures of isolation and disinfection as other infectious diseases. Since the diagnosis is sometimes not possible, it is well in regions subject to yellow fever to carefully disinfect and isolate all cases of sickness that might possibly be yellow fever, between April 1 and October 1, the measures to be taken being much the same as those employed in typhoid fever, and visiting prohibited betwen the dates mentioned.

128. This paper was commented on editorially, in the JOURNAL of October 21, p. 1058.

129. **Tuberculous Adenitis.**—According to Morgan, this condition is not nearly as frequent as it was fifteen years ago, and it is largely dependent on surroundings. If we could improve the individual soil as well as the environment, still more could be done, but the marriage and intermarriage of tubercular predisposed individuals is beyond the jurisdiction of the medical officer of health. He notes the relation of the glands with the cutaneous and mucous surfaces, the teeth and gums, the tonsils, and the nasal pharynx, especially when adenoids are present. As regards treatment, he insists on the boiling of milk, frequent examinations of the throat, and attention to the teeth. He thinks that before using cod-liver oil, it is well to give a little grey powder and alkaline mixture before meals for a few days, and then whatever tonic suits the child best. In the majority, iodid of iron with malt is good and well taken. Fresh air and sunlight are essential. For local treatment he has used an application of iodin or iodid of potash with glycerin painted over the enlarged glands, which is often very beneficial. If after fair trial with general and local treatment, the glands still increase in size and show signs of softening, the sooner they are excised the better. The glands should be taken out without bursting if possible; pressure should be avoided.

130. **Night Terrors.**—Little rejects the epileptic theory of their causation. In nearly two-thirds of his cases incipient heart disease was present. He maintains that they are caused by reflex stimulation almost always produced by dyspnea. He sums up his findings and opinions as follows: 1. Night terrors are in the great majority of cases caused by disorders productive of moderate but prolonged dyspnea. 2. A preponderating number of cases are found in rheumatic subjects with early heart disease. 3. A considerable proportion of cases are due to obstruction of nasal cavities and fauces. 4. Digestive disturbances do not play the important part in causation that is often assigned to them. 5. The evidence for their causal connection with epilepsy or allied neurosis is scanty. 6. The attacks occur in the subconscious stage of early sleep, and are confined to young children under puberty.

140. **Mastoid Disease.**—A case of mastoid periostitis and inflammation of the mastoid cells is reported by Dabney, and he offers in conclusion the following points as regards the mastoid operation: 1. In all operations scrupulous attention must be paid to surgical cleanliness, as the unexpected may happen and some meningeal exposure be found. 2. In periosteal inflammations an incision should be made over the mastoid down to the bone and the bony surface carefully examined. 3. When the mastoid antrum is to be opened, the opening should be just behind the external meatus and just below its superior border. 4. Chisels and mallet are the best instruments for opening the mastoid, followed by curette, sharp spoon, and rongeur forceps. 5. It is best to establish drainage through the mastoid antrum into the tympanum. 6. It is of great importance to examine the process in the direction of its tip, and if need be to thoroughly open it. 7. The upper part of the wound may be closed with a few stitches; iodoform gauze should be packed into the lower part and well into the bony cavity. The subsequent dressings and irrigation may be determined by the absence of fever and other septic symptoms.

141. **Early Treatment of Insanity.**—The tendency to postpone asylum treatment in cases of insanity is deplored by White, who points out the dangers of delay, especially as regards the patient's condition as to auto-intoxication and the administration of sedatives that are usually required in home treatment. The statistics that he gives of recoveries under asylum treatment after various durations of the disease, are as follows: New admissions received within three months of the onset, 75 per cent. recover; 50 per cent. within six months; 25 per cent. within one year, and 10 per cent. after one year's duration. These figures, he claims, are based on reports of asylums throughout the world, carefully collected and prepared by men thoroughly versed in such matters, and are, therefore, worthy of confidence.

142. See abstract in JOURNAL, September 23, p. 796.

143. **Early Rupture in Ectopic Gestation.**—After calling attention to the rarity of rupture in tubal pregnancy during the first months, Henrotin and Herzog report a case in which, from the history and examination of the specimen removed, both macroscopic and microscopic, they come to the conclusion that the pregnancy occurred originally in a diverticulum of the tube, which was short and probably traversed the fibers of the muscular coat outward in such a manner that its wall was exceedingly thin. This gave way very early, not later than three weeks after impregnation, under the influence of pressure and pressure atrophy, and a rupture and hemorrhage from the placental site occurred. At the time of the rupture the ovum must have been alive, as there were no indications of previous hemorrhage or degeneration of the decidua and syncytial buds. They do not attempt to say whether the diverticulum was congenital and due to an embryonic anomaly or was produced later in life by some pathologic process.

144. **Accessory Thyreoids.**—Watson reports two cases of tumors at the base of the tongue, composed of thyreoid tissue, and states that he has been able to find but two cases reported since 1892, of a similar condition. Prior to that Warren of Boston had reported one and mentioned others collected from the literature by Butlin. It is notable that these tumors are not mentioned in most of the works on diseases of the nose and throat, including those of Mackenzie, Cohen, Brown, Bosworth, Ingals and Sajous. McBride, in his last edition, merely mentions them as possibly occurring on the tongue. Thyreoid tumors in this position are developed from a persistent upper part of the thyreoglossal duct, which is formed in the development of the thyreoid gland, and opens at the base of the tongue at the position of the foramen cecum. The thyreoglossal duct is usually obliterated after the eighth week of fetal life, but may persist, wholly or in part throughout life.

145. **Death From Electric Current.**—Cunningham's paper will be concluded in the coming issue of the *New York Medical Journal* and will then be noticed.

146.—See abstract in JOURNAL, July 22, p. 225.

147. **Atmospheric Changes and Hearing.**—Oppenheimer has studied fifty consecutive cases of chronic sclerosis of the middle ear, to determine the variations of hearing under different atmospheric conditions. He calls attention to the fact that the aural apparatus is but a sort of specialized diverticulum of the respiratory tract and has the same histologic characteristics, except such as are connected with its special functions. He also notices the intimate connection between the nasopharyngeal and aural cavities, and the conditions of atmospheric pressure affecting each. He concludes his article with the following: 1. The hearing in at least 70 per cent. of cases with chronic catarrhal deafness becomes worse under adverse weather conditions. 2. The degree of impairment of audition, as influenced by atmospheric changes, is determined to a great extent by the location and character of the pathologic process in the tympanic cavity. 3. The morbid alterations most susceptible to barometric variations are those of hyperplasia. 4. In purely atrophic changes in the middle ear weather variations have little or no effect on the auditory function. 5. Atmospheric influences also impair the hearing by unfavorably affecting catarrhal processes of the upper respiratory tract and Eustachian tube. 6. All things being equal, the impaired audition in chronic catarrhal otitis is diminished more—under unfavorable weather influences—in those whose general health is below par than in those otherwise healthy.

148. **Asthma and Eczema.**—The case here reported by Taylor is one in which there seems to be a direct connection between a dermatitis and asthma in a boy aged 8 years, and he

calls attention to this fact without attempting to give an explanation.

149. **Carbolic Acid Injection in Tonsillar Disease, Etc.**—The treatment of the angina of scarlet fever, suggested by Heubner and recommended by Seitz of Munich, is here described. Seitz uses a long needle syringe, the needle having a shoulder about 4 mm. from the point, to prevent too deep injection and consequent injury of the vessels. The shank and needle proper of Lipes' syringe, are together about 6 cm. long and with the extremity turned at an angle of 45 degrees, the elbow being about 3 mm. from the point. This form permits the injection into the tonsil and the angle prevents too deep introduction, thus doing away with the necessity of the shoulder. In children, of course, a mouth-gag and tongue-depressor are necessary. The solution injected varied from 1 to 4 per cent., and though used at first with some hesitation for fear of trouble, no bad effects have been observed. The cases under observation in which this method was used by Lipes includes 5 of scarlet fever; 6 of diphtheria; 3 suppurative, 4 simple and 3 follicular amygdalitis. All but 2 were in children from 8 months to 15 years of age. In diphtheria no beneficial effects were observed and he thinks possibly it may be harmful by destroying the combative influence of the staphylococci on the Klebs-Loeffler bacillus. In scarlet fever there was no doubt as to the value of this procedure. Immediate relief was obtained with prompt reduction of the fever and immediate improvement of the general condition. These cases occurred in girls 4, 6 and 7 years of age. With the youngest patient first treated a 1 per cent. solution was used and only in one tonsil, and as some relief and no bad effects were observed, a few hours later both tonsils were injected with a 3 per cent. solution. In the 2 other cases only a single injection was necessary. The 4 cases of simple amygdalitis were seen in the early stages and, as other measures were used, the direct value of the injections can not be stated. All did well. In follicular and suppurative amygdalitis, where the cases were seen early, the results were more positive. In no case was carbolic acid intoxication observed, nor was there any sloughing of the tonsillar tissue, which was greatly feared in the younger children.

150. **Arid Regions in the U. S. for Consumption.**—Cobb says any altitude in the arid region above 2000 feet is as good as any higher for acute consumption. For women, those in an advanced stage of consumption and those with a tendency to hemorrhage care must be taken to select a medium altitude and cases with stenosis must never go to a high one. Patients must understand that they must make it a business to get well. The stories of hunting and fishing and scenery, except in Colorado, are likely to be exaggerated. The patient must not believe it is warm because there is so much sunshine, for though the midday may be hot, the nights are apt to be cold. The absurd idea that destructive valvular lesions prohibit living in an altitude above 2000 feet is mentioned by Cobb, who says that a little thought will convince any one that the average case without stenosis will do better here than at sea-level. As regards pulmonary hemorrhage, he can give no positive opinion, but he thinks patients suffering thus should first try a medium altitude. Physicians in the East should be very careful in sending women west, as menstruation is increased, often dangerously, in high altitudes, and in other respects the climate does not suit them so well. He believes that if the diagnosis is made early, before complications occur, 80 per cent. of the patients sent to the arid regions will recover. In cases of extensive, dry, pleuritic lesions of both lungs, the high altitude is dangerous. Women should start at an altitude not above 3500 feet. The accommodations, except in a few cases, are not good and hardships must be expected to be undergone. Sanitary arrangements are often very imperfect, and some patients become reinfected. He gives a directory of the principal resorts and their accommodations.

151. **Steatosis of Liver and Coagulation Necrosis.**—Vitale takes up the defense of Sanarelli against Drs. Reed and Carroll, in some detail, explaining Sanarelli's methods and results. He thinks that possibly Drs. Reed and Carroll confused necrosis in general with coagulation necrosis, which are two entirely different things.

152. **Beta-Eucain.**—Poole reports the advantages of beta-eucain, especially in nose and throat cases and in anesthesia. He ends with the following conclusions: 1. Eucain is decidedly less toxic than cocain, therefore superior to it. 2. Its aqueous solutions keep well and can be sterilized by boiling without destroying the activity of the drug. 3. It produces anesthesia equally well and sometimes better than cocain. 4. It is superior to cocain in that it does not cause heart depression or other unpleasant effects. 5. It does not cause mydriasis or disturbances of accommodation, which is an advantage in some cases. 6. It is less dangerous to the cornea than cocain, inasmuch as it does not cause desquamation of the superficial epithelium.

154.—Richardson's paper is to be continued.

155. **Cerebral Tumors.**—Knapp concludes his article with the following statement: If we summarize the results of surgical interference in cases of cerebral tumor in the last fourteen years, the outlook must be acknowledged to be discouraging. In about five-sixths of the cases of intolerable headache trephining will afford temporary relief, and, while sometimes hastening the end, will make the remaining period of life more endurable when drugs have failed to do so. In some cases of progressive amblyopia palliative trephining may also prevent blindness by checking the progress of the neuritis. With regard to the more radical operation of removal of the tumor, the chances of success are few and the outlook for the future is more hopeless. We do not seem to have gained much in diagnostic skill, although the gain in operative technique has diminished the mortality. Less than 10 per cent. of all cases are amenable to surgical interference, and a mortality of nearly one-third renders the operation one to be undertaken only after grave deliberation. The chances of complete recovery after such an operation are very small, probably less than 10 per cent. of the cases where the growth is wholly removed. The rest of the cases linger on, paralytic, epileptic or blind, and many finally succumb to a recurrence of the growth. It is a question whether the results of these operations are any more favorable than would be those obtained by medical treatment in the same number of cases, but statistics on this point are inadequate. Nevertheless, there is a small chance that an operation may effect a complete cure, or, at least, give relief for a number of months. With that chance, small though it be, an operation becomes justifiable, and the sooner it is done, if it is to be done, the greater the chances of permanent benefit. The constant increase in operative skill will probably continue to lessen the death-rate, and, although little has as yet been gained in diagnostic skill, there is still room for hope.

157.—See abstract in JOURNAL, August 26, ¶ 6, p. 534.

158.—See abstract, p. 1102.

161.—Ibid, JOURNAL, September 9, ¶ 54, p. 659.

162. **Inherited Syphilis.**—Simes has investigated the contagiousness of inherited syphilis. He has sent a letter to 37 physicians who from their experience would be apt to be able to give information, asking whether they had ever personally treated or known a case of syphilis thus contracted. Thirty-five replies were received, of which 31 were negative, 2 in doubt and 2 affirmative. The latter were unquestionably reliable cases, and he concludes that in answering the question, "Is Inherited Syphilis Contagious?" he would say that while there is a certain degree of contagiousness connected with inherited syphilis, it has been greatly overestimated. The fear of every case of inherited syphilis being a source of danger is a very great exaggeration. To draw the line where contagion begins and where it ceases would be very desirable, and he suggests that those cases that present the so-called secondary lesions may be placed on the side of danger, and when these are absent, contagion may be excluded. Still, this may not be absolute for all cases.

164.—See report of Detroit Medical and Library Association, JOURNAL, October 21, p. 1040.

165. **Early Diagnosis of Cancer.**—Hemmeter accepts the statistics showing the increase of cancer as correct, and points out the different diagnostic marks, constipation, emaciation, absence of HCl, and increase of lactic acid, which last he thinks does not occur sufficiently early to be a good diagnostic sign. The microscopic examination shows minute fragments of cancer tissue and the so-called Oppler-Boas bacilli, both of which are important features. The examination of the urine has not often proved of value. The blood examination is useful in dis-

tinguishing from pernicious anemia. The presence of tumor is important and valuable as a sign. He notes the difficulties of differentiating cancer from hypertrophic pyloric stenosis and from diseases of the stomach associated with absence of HCl. There are, in his opinion, only two methods of making a positive early diagnosis of gastric cancers, one by curetting the stomach and examining the products, and the second by exploratory laparotomy.

166. **Paralyses Following General Anesthesia.**—Leszynsky calls attention to the preventable paralyses occurring during general anesthesia, affecting, as a rule, the upper extremities, and caused by the faulty manipulation of the arms, pressure from metal clamps, undue extension of the head toward one side, permitting the arm or leg to hang over the edge of the table, or pressure by the anesthetizer. He thinks the importance of these is often belittled and neglected.

168. **Renal Casts.**—The importance of renal casts is discussed by Linsley, and he thinks that in all cases they should be considered suspicious, though the narrow hyaline casts may indicate only vesical irritation. One of the common causes of their presence is the excretion of uric acid, and as this is often a symptom of a pre-nephritic condition, he thinks the recognition, if more general, would save many lives that now succumb to renal cirrhosis. Before examining the urine for casts, it should be allowed to stand for at least three hours in a conical glass, or better, subjected to mechanical sedimentation in a centrifuge. No higher power than ¾ to ½ inch should be used for the detection of casts. A very important feature in this examination is the illumination. The opening in the diaphragm should be reduced until the specimen is only faintly illuminated, then turn the mirror, using its concave side, in such a way as to direct oblique rays of light through the slide and objective. After carefully examining the specimen with a low power, a cover-glass may be applied and higher powers used.

169. **Hysteria and Organic Diseases.**—Zenner calls attention to the importance of making a correct diagnosis between so-called hysteria and organic disease. The former, as is well known, may simulate nearly every disorder, and he has observed mistakes made by very competent men. He points out some of the guides to diagnosis, such as the hysteric temperament, the stigmata of the disease and the crises. The peculiar grouping of the symptoms is also a help, and their rapid changes, also the marked influence of mental impression and the power of suggestion. As special symptoms of diagnostic importance, he mentions the globus, the contraction of the visual field, for hysteria; and hemianopsia, alteration of the deep reflexes, rigid pupils, and the reaction of degeneration for organic nervous diseases. Nevertheless, these are not altogether pathognomonic, and the greatest safety lies in always remembering the difficulties of diagnosis and making painstaking examinations and careful observation. The importance of correct diagnosis in these cases, both for the physician and the patient, is very evident.

170.—See abstract in Journal, October 7, p. 917.

172. **Typhoid Fever.**—The special object of Kolipinski's paper is to call attention to an application of arsenite of copper in meeting some special indications in typhoid fever. When in the second, third or fourth week the acute symptoms have disappeared, and the temperature continues at the same daily elevation, and shows no indication of declining, or else, at these times, from nervous shock or other accident, the fever suddenly mounts higher, or else should the temperature be subnormal in the morning and rise to 99 F. or 100 F. in the evening, being markedly intermittent—under all of these conditions will the arsenite of copper arrest the febrile oscillations completely in from one to four days and convalescence follow. The mode of administration consists in giving from 1-1200 to 1-2400 of a grain diffused in a teaspoonful of water every half-hour for two or three days, of course allowing ample time for sleep. He remarks on the minuteness of the dose, much less than is usually recommended in works on therapeutics, but claims that the special effect is thus produced.

173. **Mercurial Vapor Baths.**—The apparatus described by Robbins is the result of several months work. He describes it as follows: The box as it now is has several new features. The top, as it is generally made, has a space only wide enough to encircle the neck of the patient. It is a double-hinged thing, split down the center. The top is made in one piece, excepting an opening which allows the head to pass through. Around this aperture rubber cloth is securely attached, and a cord makes it secure around the neck of the patient, admitting of no escape of the steam. The dimensions of the cabinet are three feet nine inches, by two feet nine inches, by three feet eleven inches. It has a door and two windows, where one can see how the steam is acting and whether the calomel is being dissolved or not. It is lined with oilcloth. The wood is of triple thickness and of the best seasoned wood. There is no leakage of steam. Within there is an iron revolving chair, which can be raised or lowered, according to the height of the patient. This chair has a foot attachment, so that he can make use of the electric wire, if desired, which also illuminates the box. He has gas connection. The gas pipe has a cock above the box, while at the bottom there is a double cock, one connecting with a Bunsen burner, over which is a tripod, which dissolves the mercury, and the other is connected with a little gas stove, on which is a pan of water to be converted into steam. In an upper corner of the box there is a warranted Watertown thermometer, with the bulb within the box. If the thermometer in its entirety were placed inside, behind a piece of glass, as it generally is, the condensed steam would cloud the register, making it impossible to read it. It requires a Bunsen burner to dissolve the mercury. After steam has begun to form, he places the patient on the chair in the box, then calomel, from ten to thirty grains, on the tripod. Instantly it begins to dissolve. In a minute you will notice steam and a film of mercury being condensed on the windows. Then the scale of the thermometer gradually ascends until it reaches from 110 to 120 F.; then the patient is sweating profusely. Then cut off the flow of gas from the upper stop-cock; then the register slowly falls. Altogether it takes about twenty minutes to give a bath. He does not allow the patient to rub off, but has him put on all his clothes at once. He has given these baths in the coldest winter weather, and no patient has "taken cold."

FOREIGN.

Dublin Journal of Medical Sciences, October.

Dislocation and Fracture of Astragalus. Henry Gray Croly.—The following are the conclusions arrived at by Croly, from a discussion of his own experience and the literature in regard to fracture and dislocation of the astragalus: 1. The term "sub-astragaloid" is confusing and misleading. 2. In dislocation of the astragalus the bone is either partially or completely separated from its surrounding articulations, and if a wound exists, and any portion of the bone protrudes it is compound. The direction in which the bone is displaced is specified by the terms forward, backward, outward, inward, etc. 3. In compound dislocation, with the head and neck protruding, the bone is so enucleated that its vascular supply is cut off, and though reduction might be affected, necrosis is certain to follow, necessitating the incision of the bone later on, meantime risking the patient's life by causing suppuration and septic trouble. 4. In compound fractures the sooner the bone is excised the better, the joint being drained. 5. In all simple partial luxations reduction should be attempted, and most probably success will be the reward of such praiseworthy efforts on the part of the surgeon. Tenotomy of the Achillis or tibia tendons may in some cases be considered necessary. In the complete simple or double luxation, where the astragalus has left its box, no effort on the part of the surgeon will effect replacement of the bone, and if its articular surfaces have undergone a change of position the bone must ultimately necrose. He advises immediate excision in these "Listerian" days as safer than allowing the bone to slough out, which always happens except in cases of luxation backward, when it may be allowed to remain.

Mercury in Diseases of the Heart. Wallace Beatty.—Noticing the comparative neglect of mercury in the treatment of heart disease, as described in modern text-books, Beatty points out its value, especially in case of venous engorgement, due to chronic pulmonary mitral valve disease or dependent on mitral incompetence, or from failure of the right heart caused by emphysema and bronchial and cardiac dilatation due to chronic interstitial nephritis, as well as in cases of dila-

tation with general dropsy and yet without obvious valvular disease. He finds the method most successful in his hands, of administering mercury, to be with small doses frequently repeated for its diuretic effects. The plan he adopts is to give a pill containing ½ gr. of calomel, usually with digitalis or squills every four hours, night and day, for ten to fourteen days. In case they produce purgation, he changes the pills to one with opium instead of the digitalis, ⅛ to ½ gr. He usually gives two sets of pills to be employed according to the circumstances. He thinks that mercury acts by stimulating the renal secretions and increasing the activity of absorption at the same time. He does not pretend to say that it is useful in all cases, but when digitalis and other cardiac tonics fail, the use of mercury is often attended with the happiest results.

Reaction of Intestinal Contents in Man. J. J. CHARLES.—The author investigated the reaction of the human intestines in fresh bodies before being prepared for dissection, and while the results may not be altogether reliable, still they agree fairly with those obtained by MacFadyen and others during life. He believes that in man in the reaction of the contents of the small intestines in normal digestion is mostly acid, and this is probably due, in the duodenum, to hydrochloric acid, and lower down to lactic and other organic acids, probably the products of fermentation. The reaction of the large intestine is, he thinks, generally alkaline, the secretions neutralizing the acid products from above. The feces are almost invariably alkaline, and acid reaction indicates abnormal digestion with much acid secretion.

Medical Press and Circular (London), October 4.

New Method of Estimating Lithates in Urine. FREUND and TOPFER.—This clinical lecture gives a new method of estimating lithates in the urine, stated briefly as follows: "About 5 c.c. of normal concentrated urine, to which an equal quantity of a 95 per cent. of alcohol is added. (It is always better to take two similar samples as controlling each other.) Place on a water bath and evaporate, rubbing well with more absolute alcohol. To the alcoholic extract 70 c. c. of a pure ether oxalic solution is added and allowed to crystallize; the crystals are again washed well with ether and filtered, about 80 c.c. more of ether being required. After drying filter and dissolve the crystals in a Kjeldahl flask with two drops of phenolphthalein and titrate them with a fourth normal soda solution. One c.c. of this ¼ normal solution corresponds to 0.015 grammes of urea, CH_4N_2O."

Journal of Laryngology, Rhinology and Otology (London), October.

Diminished Bone Conduction as Contraindication for Ossiculectomy. DUNDAS GRANT.—The question as to the propriety of the removal of the ossicles is considered here by Grant, and cases of post-suppurative deafness improved by ossiculectomy are reported. He thinks the rule laid down by Politzer, as to diminished bone condition being a contraindication, has its exceptions, and though bone conduction was reduced in these cases reported, improvement was marked. He summarizes his conclusions in the following: The presence of the ossicles may interfere with the hearing power in post-suppurative cases in the following ways: 1. By being fixed themselves, and thereby making the stapes immobile. 2. By favoring the accumulation and retention of desquamative and exudative products which impede the movements of the stapes. 3. By preventing the application of a cotton-wool drum to the stapes. Their removal is under these circumstances justifiable and desirable; if the hearing power is less than for the whispered voice at 1 meter and the bone conduction is good. Even if the bone conduction is diminished to some extent, a slight improvement in hearing may follow the operation of ossiculectomy. A very slight improvement in hearing may make the difference to the patient of being able to follow his employment.

Practitioner (London), October.

Diseases of Stomach and Diagnosis by Chemical Methods. VAUGHAN HARLEY.—In this lecture it is stated that the object is to indicate the chemical methods for diagnosis of gastric disease and show their value. Harley describes the method and technic and the methods of analyses employed. He gives tables showing the analyses in cases of gastric ulcer, hyperchlorhydria, carcinoma and neurotic dyspepsia. He also gives analyses in acholia gastrica and gastric catarrh, which last he believes may sometimes occur due to special irritation, but as far as analysis of gastric contents goes, it corresponds to the ordinary neurotic dyspepsia, that is, total acidity is decreased with a tendency to increase of volatile acids. Mucus is present and generally in excess. The digestive power of the stomach is increased, while its motility may or may not be decreased but is never increased. Treatment may increase the acidity and diminish the mucus and volatile acids, but the cases are difficult to cure.

Hot Air Treatment of Disease.—F. G. DOUGLAS KERR.—The author summarizes his results instead of giving details of cases, as follows: 1. Gout: Here it is a most valuable aid in the acute stage, during which it is not customary to employ thermal baths. Even one bath affords considerable relief of pain, which is appreciated as soon as the temperature rises above 300 degrees, lasts during the bath and continues for hours afterward; in fact, the pain is seldom so severe again. In several cases of acute articular gout he has given two baths daily, one to the whole body in the morning and a local one in the evening to the parts affected, with the result that the attack has been reduced to a matter of days instead of weeks as on former occasions; the results seem, however, to be only temporary unless the treatment is combined with, or followed by, a thermal course. One patient declared that a course of thermal baths at Aix or Bath kept him free for eighteen or twenty months, but that he had had three acute attacks in five months when treated only by hot air, though each attack yielded to the treatment within a few days. The interval between the first and second attack was four months, that between the second and third, barely four weeks. In gout, as in other ailments where there is a marked inactivity of the skin, a few hot air baths quickly restore the function, and the patient is found to perspire much more freely with the mineral baths afterward. While drinking the thermal water this increase of perspiration might be expected to lessen the amount of urine, but the reverse is the case, the elimination being increased for some days after each hot-air bath. 2. In rheumatism he has had no chance of trying the effect of this bath in an acute attack, but should have no hesitation in doing so, and should expect good results would follow. In chronic rheumatism undoubtedly good results after a time have followed its employment, both in the articular and muscular forms. 3. In chronic phlebitis some of the most satisfactory results have been obtained, even in old-standing cases, where swelling was a source of great inconvenience. A marked diminution in the size of the limb resulted from one bath, and, after a further course, the swelling became permanently less, or entirely subsided. 4. In sciatica and other nerve pains the results were conflicting; all persons experienced relief while in the hot air, some cases rapidly improved, while others, starting in a chronic stage, seem to have taken on more acute symptoms. 5. In rheumatoid arthritis the hot-air baths proved more markedly beneficial than any other treatment. In the early and more acute stages the tender and enlarged joints have rapidly improved and the general condition has decidedly benefited, most patients gaining weight during the course. In the latter chronic stage, where all inflammation has left the joints, but deformity and fixation remain, little or no benefit resulted from the hot-air treatment alone. In those cases, however, where the joint condition warranted forcible movement under an anesthetic, it was his practice to give a hot-air bath as soon as the effects of the anesthesia passed off, with the result that the swelling and pain were greatly reduced, and subsequent baths greatly hastened recovery of function. 6. In most organic heart cases one would naturally hesitate to use so powerful a form of treatment. In several patients undergoing a Nauheim course, where cold feet and hands were a marked distress, he had excellent results from a few hot-air baths giving during the treatment. 7. In general debility and anemia, where there was no counterindication to their employment, good results came from whole body baths. Even delicate patients, once they get over their first nervousness, bear the baths well; in no single instance did bad results follow their use. 8. In surgical affections of the joints, especially those of stiffening, following the application of splints, the local baths are most valuable, and greatly hasten recovery; the increased

circulation also promotes the development of the muscular tissue. To sum up: The hot-air treatment will prove a useful addition to our power of treating certain selected cases. We can not expect impossibilities from it, and should be careful not to be misled by exaggerated trade advertisements; nothing but discredit can result from its too promiscuous use in unsuitable cases.

Revista Medica de S. Paulo, August 15.

Technic of Brant-Paes Leme Method of Preserving Cadavers for Anatomic Studies.—This method has already been briefly described in the JOURNAL, June 24, p. 1438. It has proved a boon indeed in tropical countries. The solution is a mixture of 20 grams commercial formol and 100 grams sodium acetate to each liter of water. From three to eight liters are required for one cadaver. The injections are made with an ordinary irrigator, the olive-shaped tip of the syringe inserted in the carotid and the blood fluid escaping through an opening made in the jugular. When the cadaver is to be kept longer than ten or fifteen days, a stronger solution is used: 600 grams water; 400 grams glycerin; 4 to 10 per cent. formol and 100 grams sodium acetate. The nostrils and mouth must be closed with cotton moistened with formol. The time required, the expense and trouble are minimal and the results most satisfactory, although the method shares with all others the disadvantages that the tissues tend to become hard and discolored in time. Cadavers injected when the abdomen is already green lose their fetidity and become useful subjects for anatomic studies. But the most important advantage of the method is the remarkable attenuation if not total extinction of the cadaveric virulence, which means the absolute harmlessness of scratches received during dissection, etc.

Annales de Dermatologie et de Syphilographie (Paris), September.

Defense of the Skin Against Microbes. R. SABOURAUD.—The three organs of defense possessed by the skin are the epidermis, the derma, and the migrating white corpuscles. The vascular and nervous systems, etc., are merely accessory. Each of these organs of defense defends itself by the same function for which its differentiated form has prepared it. The epithelial cell defends itself by making horny cells, the fiber cells by making fiber and the white corpuscle by its constant rôle of a unicellular amœboid, seizing the enemy, closing in around it and feeding on it. Every microbian lesion must be regarded simply as a battle-field. This conception is the foundation for all pathologic histology, and unless this is thoroughly understood, the whole phenomenon is a mystery, while once grasped, everything becomes plain: the exfoliation is merely the epidermis defending itself; suppuration merely the leucocytes defending themselves, and the induration merely the mechanism of the fibrous defense. Each tissue, each element, is independently defending itself, and we know that any direct irritation of a living cell induces its multiplication, whether the irritation is mechanical or toxic. The process is a blind, unintelligent process, often defeating its own aim, as when a white corpuscle seizes a microbe and carries it away with it, but is conquered by the microbe. The microbian lesion as we see it, is not a passive scene of destruction by the microbe. It is essentially a cellular reaction on the part of the organism against invasion, a defensive apparatus erected by the organism itself, and this conception of it places dermatology in an entirely different light and renders a new classification necessary. Our present classification is like a pharmacy in which all the drugs are arranged according to the size of the bottles without regard to their contents.

Annales de la Societe Med.-Chir. de Liege, July.

Etiology and Pathogenesis of Pneumonia. L. BECO.—Examination of a large number of cases of pneumonia has convinced Beco that the pneumococci or the pneumobacilli are the causes of pneumonia, and that there is nothing to indicate the participation of secondary microbes in the morbid process. He explains their presence by the extension of the bacterial flora of the upper air-passages to the farthest ramifications of the respiratory apparatus during the agonic or preagonic period which he has established. He also asserts that lobular pneumonia may be accompanied by catarrhal inflammation of the bronchi, but that it has never been possible to produce a lobular pneumonia experimentally with pyogenic microbes, but merely lobular bronchopneumonia. He reports a number of tests and experiences which have shown that the pneumococcus is frequently encountered in apparently normal lungs, that it can live and multiply there in the absence of any pathologic alteration, retaining its virulence intact or attenuated, and that therefore the respiratory apparatus is always in danger when this occurs. The causes that increase the virulence of the morbid germ will affect it just the same in the deep air-passages as in the upper, and there is liability of the occasional factors whose importance is undeniable, such as cold, traumatism and over-exertion, which intervene by rendering the soil particularly receptive for the pathogenic agent already installed there. A reflex congestion with edema, from the action of cold, probably provides the culture-medium in most cases.

Nord Medicale (Lille), October 1.

Foreign Bodies in Child's Esophagus. PHOCAS.—Kirmisson's hook for extracting coins from the esophagus is proving wonderfully successful. The hook is shown and a case described, where a large coin that had lodged opposite the fourth dorsal, five days before, was extracted at the first attempt, without the slightest difficulty. In inserting the hook the finger is placed between it and the posterior wall of the pharynx, which guides the hook along the posterior wall behind the coin, while it is withdrawn with the finger between it and the anterior wall, when it seizes and brings the coin out with it.

Surgical Treatment of Lymphadenomata. J. VANVERTS.—The conclusions reached by the author from study of the ultimate results of intervention and non-intervention are that the former is evidently counterindicated in all cases in which the malignant lesion is no longer localized, either from the coexistence of leukemia or from multiplicity of the tumors. Cases in which the lesions seem to be localized, which left to themselves or submitted to medical treatment alone, are bound to become disseminated at a given moment, justify the hope that radical intervention will result in a cure or at least in long survival, provided that the operation is performed soon enough. But before the matter can be definitely decided a series of prompt interventions with complete histologic and hematologic analysis must be placed on record for comparative study. Experience has demonstrated that ablation of a lymphadenoma of the spleen if localized and aleukemic, may ensure long improvement if not a definite cure. Fifteen out of eighteen cases thus treated are still in excellent health. Two died of recurrence and another after nephrectomy for sarcoma of the left kidney. These are the only cases that have been followed to date out of seventy-five thus operated on. In case of ganglionary lymphadenomata, the difficulty of diagnosing has prevented operation in many cases, but chronic adenitis does not occur as a progressively growing tumor, tuberculosis adenitis is rarely localized in one point. In case of doubt as to the nature of a hypertrophy of a ganglion, it is preferable to remove the ganglion. The operation will be useless in some cases, but it will never be dangerous and it may prove useful in certain others.

Progres Medicale (Paris), September 30.

Artificial Serum in Acute Psychoses with Autointoxication. A. CULLERRE.—In acute psychoses accompanied by grave symptoms of autointoxication, subcutaneous injections of a solution of sodium chlorid—7 per cent.—are frequently followed by the rapid disappearance of the alarming symptoms and a general improvement manifested in the re-establishment of the secretions and excreting functions and the disappearance of the sitiophobia. The mental condition is also usually benefited. Eschars heal; the dangerous delirium subsides; appetite returns; and in a case of uremia and alcoholic mental confusion the results were immediately and remarkably favorable. The experience in six cases described, although limited in number, was so unfailingly beneficial that Cullerre does not wait for further endorsement before proclaiming the advantages of this method of treating acute psychoses, combined with other measures usual in such cases.

Revue Hebd. de Laryngologie, etc. (Bordeaux), September 30.

Examination of the Ear After Sympathectomy. LANNOIS.—Ten persons who had been operated on by Jaboulay, for epilepsy or exophthalmic goiter, were examined and in each case vasodilatation in the external ear and an elevation of the temperature were noted. The congestion extended into the

tympanum and varied in duration from a few days to two or three months, the evidences of the vascular perturbation persisting still longer and suggesting that possibly there is here an indication of the possibility of modifying the nutrition of the entire auditory apparatus. The hearing was increased in three cases, similar to the improvement in distance vision noticed by Jaboulay, and which he ascribes to contraction of the pupil. One young man was freed from the buzzing in his ears, which had tormented him since childhood, although not relieved entirely of his epileptic seizures.

Berliner Klinische Wochenschrift, September 18 and 25.

Conservative Treatment of Chronic Suppuration of the Middle Ear. STETTER.—"Wilde's incision alone will cure a number of cases of chronic periostitis of the mastoid process. A fetid secretion from the ear can also be cured by instilling menthoxol and aq. dest. āā, three or four times, applying afterward chinolin-naphthol gauze." "Periostitis of the mastoid process should be first treated with compresses moistened with Burow's solution."

Electrothermo Compresses. E. LINDEMANN.—A flat coil of the wires used in the writer's hot-air apparatus is isolated with asbestos and wrapped in Mosetig mull. These compresses can be connected with any incandescent lamp, and the temperature raised to 90 C. in fifteen minutes. None of the current passes into the compress. The advantages of this arrangement are the complete control of the amount of heat, the cleanliness and convenience of the compresses and the gradual increase of the heat applied.

Centralblatt f. Gynekologie, No. 38.

A Danger of Incubators. E. WORMSER.—An infant placed in an incubator was found dead one morning, suffocated by vomited milk drawn into the lungs. To prevent this catastrophe Wormser suggests that infants should not be replaced in the incubator until a certain interval has elapsed after feeding.

Celluloid Thread. SCHLUTIUS.—The advantages of celluloid thread are extolled by the writer, who had not had a single stitch-hole abscess since he has been using it. (See JOURNAL, xxix, p. 1030.) It is strong, easily threaded and tied, and cheaper than other suture materials.

Deutsche Medicinische Wochenschrift (Berlin), October 5.

Technic of Insufflating the Stomach. P. FUERBRINGER.—The inconveniences of insufflating the stomach without a special apparatus are avoided by Fuerbringer's present method, the advantages of which are obvious. The sound is introduced into the œsophagus, merely half way down, and he blows directly into it with the mouth, squeezing it to close the lumen except at the moment of insufflation. In all his extensive practice he has never had any one object to this use of his breath except one filthy potator who disapproved of the introduction of foreign exhaled matters into his interior.

Monatschrift f. Geburtschilte u. Gynakologie, x, 1.

Weight Therapeutics. J. HALBAN.—The purpose of this treatment is to exert a regular constant pressure on the inflamed adnexa for an hour, accomplished by elevating the pelvis and placing a bag of shot on the abdomen, and a colpeurynter filled with mercury in the vagina. It is indicated in cases of chronic tumors of the adnexa, free from all fresh inflammatory changes; the amount of pressure very gradually increased. It is also useful in perimetritis and parametritic exudates, and scars after laceration of the cervix. Good results have also been attained with retroflexio uteri.

Sectio Cesarea on Account of Eclampsia. HILLMANN.—In the 40 cases of eclampsia on record in which section was made, 21 of the mothers died and 19 recovered; 23 children were saved alive. In the observation reported in detail, the I-para had had seven attacks, there were no labor movements, and in spite of narcotics and wet-packs the condition was menacing. The fetus was found dead. Recovery was smooth except for a severe bronchitis.

Muenchener Medicinische Wochenschrift, September 26 and October 3.

Natural Defenses of the Organism and Means to Influence Them in the Struggle Against Infectious Processes. HANS BUCHNER.—This communication explains and reconciles the apparent discrepancies observed in the bactericidal action of alcohol, and throws new light on the defensive processes of the organism, the conclusions of long and extensive research, which can be summarized as follows: the substances which constitute the natural defenses of the organism against the agents of disease occur in the blood, blood serum and leucocytes, but Buchner does not consider them special antibacterial substances. He asserts that they are merely the general proteolytic enzymes which have the task, in the organism, of dissolving and making away with all foreign matter that finds its way into the tissues, and of absorbing altered and otherwise superfluous structural parts. These proteolytic enzymes, are not exclusively for protective and defensive measures against the agents of infection. Their bactericidal property is only *one* of the manifestations of their absorbing activity. The blood is therefore the great protector and defender of the organism against bacteria, but merely by this capacity of dissolving and absorbing the morbid tissue-processes caused by the infectious agents and also these agents themselves, and by this means accomplishing, as far as possible, the *restitutio ad integrum*. He adds: "However the exact theoretical conception of these facts may finally be formulated, this much is certain, that practical therapeutics has heretofore failed to derive the advantages from this property of the blood which it might. This failure has been chiefly due to the fact that we have regarded the blood almost exclusively as a substance for feeding the tissues and overlooked its absorbing capacity." "Jacoby and Bier are the only ones who have systematically sought to utilize this capacity. I consider it my task to-day to arouse every one practicing medicine to apply the blood itself as the remedy *par excellence* against bacterial infectious processes. This is best accomplished by increasing the supply of blood in the infected region, and it is obvious that fresh arterial blood will prove more effective than stagnating venous blood as with Bier's method, which probably owes its undoubted success to the fact that the proteolytic enzymes in the stagnating blood are placed in a position which enables them to exert their absorbing capacity to its extreme limit." The benefits derived from the application of hot air, hot water, frozen air, etc., are all due to the arterial hyperemia induced and not to the sweating, etc., to which they have sometimes been attributed. Cupping induces a mixed hyperemia, both arterial and venous, and Bier has recently announced "success surpassing the highest expectations" in chronic articular rheumatism treated with a suction apparatus constructed on the principle of Junod's boot. But of all means of inducing arterial hyperemia the most effective is alcohol. This effect is not due to its bactericidal power, which is very slight, but to its power of inducing the dilation of the blood-vessels by its action on the nerves of the region probably by drawing out the water and possibly by a coagulating effect. The intensity of the dilating effect produced is in direct proportion to the intensity of the water extraction. This vessel-dilating effect of the alcohol is most pronounced on the vessels of the intestines, stomach and mesentery; next on those of the muscular system, and least on those of the skin. It is also proportional to the strength of the alcohol. A peculiar feature is that the nerves of the neighboring regions are also affected which much enhances its effect. The method of applying it found most harmless and effectual is in compresses moistened with absolute or 96 per cent. alcohol, like an ordinary warm moist compress, only alcohol is used instead of water and the compresses are extended to cover the entire extremity or adjacent region, with a perforated impermeable covering outside. They are renewed once a day. Salzwedel has been proclaiming the benefits of these compresses for some time (JOURNAL, xxx, pp. 268 and 1178), and others have confirmed the efficacy in curing phlegmons, lymphangitis, panaritium, mastitis, etc. Buchner appends ten remarkable observations of the cures effected with them in surgical tuberculosis, fungus, etc. One case of fungus had been doomed to amputation, when this treatment cured it completely in four weeks. He was most impressed, however, with its success on carious teeth, in which, under the application of alcohol twice a day, the tooth brush dipped into a tablespoonful of 45 per cent. alcohol in a glass and the teeth and gums well brushed with the thoroughly saturated brush—the caries healed like a phlegmon or an abscess, the pulp becoming daily harder and less sensitive. He urges the application of alcohol compresses in the therapeutics of abdominal and pulmonary tuberculosis to sore throat, etc., suggesting that they may even prove

a valuable assistance in bubonic plague, syphilitic gummata, choleraic affections, etc., and adds that the benefits of many preparations like arnica, hair restoratives, etc., are probably due to the alcohol in them, and the success of laparotomy in abdominal tuberculosis to the hyperemia it produces. He concludes with the words: To what extent the leucocytes participate in these absorbing processes by means of their histolytic secretions, is not yet determined. The proteolytic substances of the blood and of the leucocytes theoretically work together. In practice, however, we are not yet able to compel the leucocytes to exert their action at the precise point where it is needed. It is true that with chemical means we can entice the leucocytes to assemble in a certain portion of the body or induce general hyperleucocytosis. But in the former case we can not force the assembled cells to rapidly move on and disperse again, and in the latter we can not concentrate their action at a given point. The blood is free from these difficulties and in the controlled concentration of the blood we have a powerful weapon in our hands, both prophylactic and curative, for the battle against the causal agents of infection.

Action of Mucilaginosa. H. v. TAPPEINER.—A number of tests and experiences are here described which demonstrate that the presence of colloid, mucilaginous substances in a solution does not materially affect the movements of the molecules, and hence that the arrest of molecular movement is not the explanation of their physiologic effect. But there are other movements, such as peristalsis, the motion of the ciliated epithelium, the vibration caused by the pulse-beat and others, and these movements are in fact checked by mucilaginous substances. The labor required to raise or push along a mucilaginous fluid is much greater than with water, on account of the "internal friction."

Peritoneal Sepsis and Shock. O. KUESTNER.—In a number of cases of death from assumed shock after laparotomies, the abdomen was opened a quarter of an hour after death, under the same precautions as for an operation, and loops taken from the operated region, for cultures. In nearly every case, although there had been no indications of peritonitis, streptococci or staphylococci were found, and some slight indications of their deleterious activity, sufficient to account for a possible toxic action on the heart and death from heart failure. Kuestner calls this: "acute peritoneal septic intoxication," and emphasizes the necessity of increased care in sterilizing the region and especially the hands of the operator and assistants; abstinence from infectious activity; extensive use of rubber gloves in infectious operations; application of antiseptic, not aseptic, principles to the hands, and careful selection of the assisting hands, and their restriction to the smallest possible number. Possibly prophylactic gauze tamponning in case of infection might restrict the proliferation and extension of the microbes and their toxins. He considers the Mikulicz tampon a great protection in cases of moderate virulence, but with extremely virulent germs only a serum could act with sufficient promptness, although possibly immediate removal of the stump and gauze tamponning, in case of sepsis after supravaginal amputation, might prove effectual.

Wiener Klinische Wochenschrift, October 5.

Pseudoleukemia and Lymphosarcomatosis. W. TUERK.—The conclusions of this study are that the term pseudoleukemia should be abolished, as it does not correspond to any morbid entity. Also that besides the very frequent partial or generalized lymphomatous tuberculosis of the lymphatic system, there is also an entirely distinct hyperplastic tumor formation in the lymphatic system, the etiology of which is still a mystery, but which Tuerk frees from the misconceptions of the past and erects into a separate group of lesions. These lesions, which have hitherto been partly included in the conception of pseudoleukemia and partly called lymphosarcomata—which includes lymphatic leukemia—all stand in the closest genetic relations to each other, with gradual transitional forms between the chief varieties. All of them can be included under the title lymphomatosis. The chief varieties are lymphomatosis partialis, by which he designates regionary, nondestructive genuine hyperplastic lymphoma formation; lymphomatosis partialis by which he designates regionary, nonlymphomatosis destruens, the transition form between partial or generally destructive forms into lymphosarcomatosis. He reserves the name lymphosarcomatosis for local and primary malignant lymphomatous proliferation, not originating in a general lymphomatosis, but otherwise anatomically identical to a certain extent with lymphomatosis destruens. The cases heretofore diagnosed as primary splenic pseudoleukemia in reality belong to the class of lesions which are best designated as lymphomatosis destruens. Tuerk postpones his arguments in favor of classing lymphatic leukemia with these lesions. He considers it a lymphomatosis in which, contrary to the other forms, the main feature is an increase in the blood-cell-producing function of the hyperplastically diseased organ—lymphomatosis lymphemica. The differentiation of universal lymphomatous tuberculosis and genuine hyperplastic lymphomatosis is best accomplished by the extirpation of a small gland or scrap of hyperplastic tissue for bacteriologic and histologic analysis. In respect to the blood, genuine hyperplastic lymphomatosis is distinguished by the lack of essential changes in the proportions of leucocytes in the blood, or there may be a diminished number of the white blood-cells.

Societies.

COMING MEETINGS.

American Public Health Association, Minneapolis, Minn., October 31.
Oklahoma Territory Medical Society, Guthrie, November 16.
Western Surgical and Gynecological Association, Des Moines, Iowa, December 27-28.
Indian Territory Medical Association, Wagoner, December.
Southern Surgical and Gynecological Association, New Orleans, La., December 5-7.

University of Maryland Medical Society.—At the recent meeting of this Society, Prof. Francis T. Miles was elected president for the ensuing year.

Jackson County Medical Society.—At its recent meeting in Kansas City, this Society elected the following officers: president, C. E. Clark; vice-president, A. A. Freyman; secretary, Franklin E. Murphy.

Stafford District Medical Society.—At the ninety-second annual meeting of this Society, held in Dover, N. H., October 11, the following officers were elected: president, E. Jacques, South Berwick, Me.; secretary, Lewis W. Flanders, Dover; treasurer, John R. Ham, Dover; auditor, George A. Tolman, Dover.

Washington Obstetrical and Gynecological Society.—At the 304th meeting of this Washington, D. C., Society the following officers were elected for the ensuing year: president, Samuel S. Adams; vice-presidents, H. B. Deal and G. Wythe Cook; recording secretary, J. T. Kelly; corresponding secretary, Edward E. Morse; treasurer, John Van Renssalaer.

Vermont State Medical Society.—This Society held its eighty-sixth annual meeting in Burlington, Vt., October 13 and 14. The newly-elected officers are: president, M. R. Crain, Rutland; vice-president, George H. Gorham, Bellows Falls; secretary, D. C. Hawley, Burlington; treasurer, E. S. Allbee, Bellows Falls. A full report will appear later in the JOURNAL.

Washington Medical Society.—At the recent meeting of this Society, Washington, D.C., Dr. Woodward read a paper entitled "An Outline of the Principles of Malpractice, from a Medical and Surgical Standpoint." Dr. Prentice reported three cases of paraldehyde habit and three cases of accidental administration of formaldelyde. Dr. Claytor reported three cases of convulsions occurring during typhoid fever.

Fox River Valley Medical Association.—This Association met in joint session with the Northwestern Wisconsin Medical Association, at Oshkosh, Wis., October 17. Besides the scientific papers presented, a surgical clinic was held at the St. Mary's Hospital, for the visiting physicians. The next meeting of the Valley Association is to be January 2, at Stevens' Point, that of the Northwestern at Green Bay, in April 1900.

Iowa State Association of Railway Surgeons.—The sixth

annual meeting of this Association was held October 12 and 13, in Ottumwa, and the following officers elected: president, N. C. Morse, Eldora; vice-president, G. G. Cottam, Rock Valley; secretary, Ira K. Gardner, New Hampton; treasurer, E. C. McNeil, Delmar. The next meeting will be held in Des Moines, in October, 1900, the date to be fixed by the judicial committee.

Association of Colored Physicians and Surgeons.—The annual session of the American Medical Association of Colored Physicians and Surgeons has just been held at Louisville, Ky. The newly-elected officers are: president, O. D. Porter, Bowling Green, Ky.; vice-president, Henry Fitzbutler, Louisville; treasurer, F. A. Stewart, Nashville, Tenn.; secretary, Dr. Nowell, Elizabethtown, Ky. St. Louis, Mo., will be the next place of meeting.

International Scientific Association.—The nine most important Academies of Sciences in the world have been holding an international conference at Wiesbaden, which has resulted in the foundation of an international scientific association to promote certain work that can best be accomplished by concerted action. The question of an international scientific language was fully discussed and it was decided that Latin should be adopted once more as the international language for scientific records and English for trade. A Thesaurus Linguæ Latinæ is also planned. Our Smithsonian Institute was represented by Newcomb and Bell; Billings, Remsen and Bowditch also took part in the proceedings.

International Congress of Professional Medicine and Medical Deontology.—The chief addresses announced for this Congress (Paris, July 23, 1900) are: "Fundamental Principles of Medical Deontology," Professor Grasset; "Professional Defense," Porson; "Relations Between Physicians and Lodges, Clubs, Etc.," Cuylit of Brussels; "Organization of Medical Chambers and the Results in the Countries Where They Functionate," Pollak; "Organization of the Physicians League in Hungary," Jendrassi. Numerous other communications are also announced, on the relations of the physician to the state, etc. Treasurer, P. Masson, 120 boulevard St. Germain. The fee for those who wish to take part in the discussions is fifteen francs, but "membres participants" are also admitted for ten francs, or about $2.

International Congress of the Medical Press.—Plans are being perfected for the organization of an international medical press congress next year, during the Paris Exposition. Professor Cornil and Mr. Marcel Baudouin are at the head of the movement and have requested the American associations to send delegates to the Congress. Professor Cornil, senator, has been selected president; Messrs. Lucas-Championniere and Laborde, vice-presidents and Dr. R. Blondel, secretary-general. The date for the organization of the Congress will be determined later. Dr. I. N. Love, St. Louis, Mo., president of the American Medical Editors' Association has appointed the following delegates to the Congress: Drs. J. M. Mathews and Horace Grant, Louisville, Ky.; Geo. F. Butler and Geo. H. Simmons, Chicago; Dillon Brown and Daniel Lewis, New York City; Thos. H. Hawkins, Denver, Colo.; Henry W. Coe, Portland, Ore. Dr. William Warren Potter, president of the American Medical Publishers' Association, has appointed the following to represent this organization: Drs. J. C. Culbertson, Cincinnati, Ohio; Ferdinand King, New York City; Landon B. Edwards, Richmond, Va.; Mr. J. Macdonald, Jr., New York City, and Mr. Chas. Wood Fassett, St. Joseph Mo.

DR. CHARLES A. WILSON, Montreal, has been appointed surgeon-major to the Canadian contingent to the Transvaal. With him are associated Surgeon-Lieutenants Osborne and Fiset and probably Surgeon-Major Nattress of Toronto.

Chicago Medical Society.

Oct. 4, 1899.

CASE OF INTESTINAL OBSTRUCTION FOLLOWING VAGINAL HYSTERECTOMY.

DR. T. J. WATKINS presented a specimen consisting of a large metritic uterus and bilateral pyosalpinx.

The patient (Mrs. N. K.), aged 29, had been ill for three years, and for one month prior to operation had suffered severely from pelvic pains, menorrhagia and some elevation of temperature.

The operation was performed at St. Luke's Hospital, Aug. 25, 1899, and consisted of a vaginal hystero-salpingo-oöphorectomy. The cervix was deeply lacerated, everted, and the seat of an extensive erosion which gave a suspicion of beginning carcinoma. Microscopic examination, however, showed no evidence of malignancy. The operation was made in the usual manner; one clamp was used on each broad ligament. Adhesions were extensive and firm over the entire uterus and about the ovaries and tubes. None of the intestines presented into the wound during the operation. The uterus was about twice its normal size, was in decided retroposition, and firmly fixed. Iodoform gauze was placed about both pedicles. The forceps were removed at the end of forty-eight hours. The portion of the gauze about the pedicles was not removed until the fifth day, when douches were commenced.

The patient made a very satisfactory recovery, and was feeling remarkably well on the eighth day, when she was suddenly taken with severe pain in the abdomen, with distension and emesis. She had had free daily bowel movements from the use of a moderate amount of cathartics. An enema produced a free bowel movement after the severe attack of pain. He did not see her until the following day, when she felt some better, although the intestines were so distended that they made ridges across the abdomen. Small doses of calomel were ordered, to be followed by salines. This, with the use of enemas, resulted in a fair movement of the bowels. One-half ounce of magnesium sulphate, in twelve ounces of water, was given later subcutaneously, without any result.

On the following day, the tenth after the operation, Dr. Frankenthal saw her with him, in consultation, and they decided to make an examination under anesthesia, and to do whatever the examination seemed to indicate—possibly an abdominal section. She refused to take an anesthetic except for examination. Examination showed the wound in a healthy state of granulation. Separation of the wound with the fingers revealed a loop of intestine adherent to the floor of the pelvis. This was loosened, as were also surrounding adhesions, and the intestine was packed high in the pelvis, with the patient in complete Trendelenburg position. A rectal tube was passed over the brim of the pelvis, the anus closed about the tube by a purse-string suture, and a two-quart enema given, with negative result. The subsequent use of strychnia, faradism, enemas, etc., proved of no value.

On the following day she consented to an operation. An abdominal section was made and numerous loops of small intestines found bound down in the pelvis by recent and old adhesions. Examination of the intestines after separation of the adhesions showed large areas completely denuded of peritoneum, and some of the intestinal wall was as dark in color as he had ever seen in cases of strangulated hernia. The small intestine was tapped by a large needle, and much gas and about one pint of fluid allowed to escape. The needle wound was closed with a catgut Lembert suture, about one quart of normal saline solution poured into the abdominal cavity, and the abdominal wound closed. The condition of the patient was so bad that it seemed certain that she could only live a few hours. The patient, however, improved rapidly, had a free bowel movement on the following day, and sixteen days later left the hospital in very good condition.

The aspiration of the intestine and the use of the normal saline solution in the abdomen were, he believes, important factors in the recovery. One relieved the pressure on the intestinal wall, and the other floated the intestines up out of the pelvis and was an active stimulant. It is surprising that the patient should have recovered after three days of complete intestinal obstruction. The small bowel movements which oc-

curred after the obstructive symptoms developed were in all probability from the intestine beyond the obstruction.

This case, notwithstanding recovery resulted, emphasizes the advisability of an early abdominal section for intestinal obstruction following vaginal hysterectomy. It would have been impossible to have satisfactorily separated the adhesions through the vaginal wound or through the rectal wall. The operation should have been made one or two days earlier. This case also shows that apparently hopeless cases of intestinal obstruction may be cured by operation.

ACTINOMYCOSIS HOMINIS.

DR. GUSTAV FÜTTERER reported a case of this affection and exhibited specimens.

DR. A. J. OCHSNER stated that the reason so few cases of actinomycosis are found in this country is simply because they are not known when seen. About thirteen years ago Professor Fenger induced him to examine for actinomycosis in the cow, and since that time he has repeatedly found it. He has averaged more than one case a year, because he is in the habit of looking for it in conditions which are ordinarily considered tubercular. Having once become familiar with the gross appearance of actinomycosis, one will discover many cases in this vicinity. All of the cases he has seen have come to him with a diagnosis of either tuberculosis or carcinoma, and in each the diagnosis was confirmed by microscopic examination. In all cases in which there were not large masses of actinomycosis, patients recovered completely on treatment exactly similar to that given cows, namely, a dram of iodid of potash, three times a day, for as many days as the patient could stand it, then stopped for a short time, and then, when they were able to take it, repeated again, and continued in this way until the patient is well.

Oct. 18, 1899.

DIAGNOSIS AND SERUM TREATMENT OF DIPHTHERIA.

The chairman announced this as the subject for the evening's discussion.

VALUE AND NECESSITY OF BACTERIOLOGIC EXAMINATIONS IN ALL CASES OF SORE THROAT.

DR. GEORGE H. WEAVER said that all practitioners come in contact with cases of sore throat quite frequently, in which there is difficulty attending the diagnosis and in determining with certainty whether there is diphtheria infection by the bacillus of this disease. A pseudomembranous inflammation of the throat is not necessarily diphtheria, and many cases of sore throat in which there is present more or less pseudomembrane on the tonsils, and sometimes on other parts of the throat, may or may not be diphtheria. Some cases of sore throat with membrane on the tonsils resemble true diphtheria so closely, from their clinical appearance, that in the absence of bacteriologic examination the physician is compelled to consider them diphtheria, and so treat them. If diphtheria is contagious, and is easily transferred from one person to another directly or indirectly, then it follows that a case of this disease should be isolated to prevent the possible transfer of the infectious agent from the sick person to the healthy members of the family. He pointed out: 1. The advantages which come from the universal use of bacteriologic examination in cases of sore throat, thus avoiding inconvenience and unnecessary expense to persons who are not only supposed to have diphtheria, but who never had it at all. 2. The advantage which comes to those persons who have mild diphtheria at first, but afterward develop more severe symptoms and disturbances. The early use of antitoxin in such cases is of decided advantage. 3. The advantage which comes from the early detection of diphtheria bacilli in cases of mild infection where danger to other individuals on account of the great virulency of the disease, is great. By the early detection of these cases the general spread of the disease can be avoided.

CONDITIONS WHICH OBSTRUCT THE PRESENCE OF THE KLEBS-LOEFFLER BACILLUS.

DR. WILLIAM K. JACQUES said that the clinical symptoms which follow the injection in a guinea-pig, of a fatal amount of diphtheria toxin, are not marked. The pig may be quiet, with a slight elevation of temperature, or it may not show any symptoms that distinguish it from the other animals in the cage until it suddenly drops dead. In the patient the presence of the toxin may not be accompanied with any clinical symptoms. True, in many cases the stupor, enlarged glands of the neck, albuminuria or anuria may indicate the approaching fatal accumulation of toxin, but those may be absent. Since the toxin itself does not cause reliable clinical symptoms, physicians must be put on their guard by those symptoms which usually accompany its production.

In the laboratory, toxin is produced by growing Klebs-Loeffler bacilli in broth; in the patient it is produced by the bacilli growing on the mucous membrane. Surgery has taught us that the inflammation following an external abrasion will be influenced to a great extent by the bacteria with which it is infected. Clinical symptoms may accompany the presence of some of these, such as the pus cocci or erysipelas germs, but the tetanus bacilli may produce a fatal amount of toxin without warning clinical symptoms. What the tetanus bacillus is to external wounds, the Klebs-Loeffler bacillus is to acute inflammation of the respiratory tract, with the exception of the production of membrane. When the site of the invasion is visible this aids diagnosis.

Every acute angina is an invasion of some pathogenic germ. The human mouth presents conditions that permit the residence of many germs. Some of these become pathogenic whenever the mucous membrane is congested or the physical resistance is for any reason lowered. They then invade the tissues and increase the inflammation. Which germ is most active in increasing the pathologic condition will depend on which meets with the least resistance. We should keep in mind that each germ is an individual organism and grows according to certain definite laws of environment. As each organism is a distinct species, its effect on the patient is also distinct and characteristic, but several germs may become pathogenic at the same time and each contributes something to the clinical symptoms.

As the Klebs-Loeffler bacillus is the fatal factor in angina, certain facts regarding it should be firmly fixed in mind: 1. The presence or absence of clinical symptoms accompanying its invasion. 2. The conditions which may obscure these symptoms. 3. Pain and increase of temperature are Nature's danger signals; both may be absent in an invasion of the Klebs-Loeffler bacilli. 4. Diphtheria toxin often acts as a local anesthetic and constitutional depressant. Nasal diphtheria is always painless, and so is the laryngeal form until the obstruction causes dyspnea. When there is pain present, it is because of other irritating germs; to them also the temperature may be due. The irritation caused by accompanying germs may counteract the stupefying effect of the diphtheria toxin and the patient be restless.

Inflammation of the tonsils may be caused by any germ that invades them. Diphtheria may begin as tonsillitis, pharyngitis or laryngitis.

The diphtheria bacillus, owing to the constant presence of so many germs in the mouth, is seldom alone in invading the tissues; and it is the symptoms caused by the associate infection that most often warn the parents. The pain, delirium or fever are not caused by the Klebs-Loeffler bacilli, and this fact often misleads physicians when they are present. There is a tendency to overlook diphtheria when associated with scarlet fever. In scarlet fever the clinical symptoms are so prominent the painful angina, the rash and the high temperature all engage the attention of the physician, and the presence of the diphtheria germ may never be suspected. By keeping in mind the symptoms of both germs, it is understood how the diphtheria bacillus could be present in scarlet fever and even be the chief cause of death, and its presence not be discovered clinically. The invasion of the diphtheria bacilli may be in the nose or posterior nares, and be overlooked for some time by the physician. Diphtheria infection during the puerperium is likely to be overlooked. There is a wider distribution of the Klebs-Loeffler bacilli now than formerly. Both physicians and the public have less fear of it and are more careless in disinfection. Many doctors do not even take a culture, but think only of the patient's safety, give antitoxin and take no further precautions.

One of the most fruitful sources of scattering Klebs-Loeffler bacilli is the "Christian Scientist" and the faith healer. They

disregard every precaution and send their children to school while infected with diphtheria, thereby exposing other defenseless children to the disease.

SUMMARY OF HEALTH DEPARTMENT'S ASSISTANCE IN CONTROL OF DIPHTHERIA IN CHICAGO.

DR. ADOLPH GEHRMANN stated that the distribution of culture outfits and the free diagnosis were undertaken in September 1894. The outfits now prepared and distributed number over 1000 during each of the winter months. The examination of cultures is at present conducted at the laboratory and at five sublaboratories, while the collection of inoculated outfits is made through the 143 antitoxin stations. The culture outfits now in use are undoubtedly the most convenient and the simplest that can be devised.

Through the medium of the antitoxin staff, the methods most serviceable in combating diphtheria were fully tested and the experience has been an education to the public and to physicians. From the work of this staff the demonstration was made clear that all suspicious cases should be examined by cultures; that the early treatment with antitoxin makes recovery almost a certainty; that immunization with antitoxin is a rational and an efficient measure in prevention. The records of the charity treatment of diphtheria by the Department plainly indicate that the disease can be controlled. The monthly record for four winter seasons, from Oct. 5, 1895, to Feb. 28, 1899, shows a mortality of 6.77 per cent. for bacterially verified cases. The speaker presented a table giving a summary of results of treatment according to the day of its commencement.

There has, however, been an increase in mortality since the first series of cases was treated, and this is in direct relation to the proportion of cases treated on the fourth day or later.

The figures cited by Dr. Gehrmann prove the necessity of prompt administration of a full dose of antitoxin. This can not be too fully appreciated, because when the disease is recognized early and antitoxin is given, there is little reason for death from diphtheria. Early recognition of diphtheria can only be certain when cultures are made in all cases of sore throat. The value of the clinical picture as a means of diagnosis in the beginning of throat infections is gradually being considered of less and less importance.

At present the usual increase of diphtheria toward winter is developing. During the first sixteen days of October there have been 44 deaths recorded, and 237 cases of diphtheria reported—a general mortality of 18.6 per cent. This increase seems to be due to a seeming failure to recognize anything serious in throat inflammations. It is perhaps true that the public's fear of diphtheria is less since the introduction of antitoxin treatment, and the physician is consequently not called until the disease is fully established.

There are some other factors in the spread of diphtheria that seem almost impossible for the Department to remedy. The isolation of patients in private houses and flat buildings is a difficult question. The Department has issued instructions for distribution among families, and instructions to milk dealers for precautions to be observed in cases of contagious disease, but these do not seem to be sufficient in all cases to make the isolation complete.

COMPLICATIONS OF DIPHTHERIA.

DR. I. A. ABT followed with a paper on this subject, saying that the almost universal use of antitoxin has to some extent changed the clinical course as well as the complications and sequelæ of diphtheria. A study of diphtheria statistics convinces us that the percentage of complications is no greater than in the preantitoxin times. More cases survive now than formerly, and this fact might be sought to explain the occurrence of a greater total number of complications. That complications occur in spite of the administration of antitoxin is to be explained on the ground that antitoxin: 1, was given too late; 2, the dose was insufficient; 3, in rare cases, that the toxins were so virulent and so rapidly acting that irreparable tissue changes occurred before the earliest possible moment that antitoxin could be used; 4, it has been suggested that some cases should be considered as unresponsive to the use of antitoxin.

Septic diphtheria is not, strictly speaking, a complication, but in the vast majority of cases is due to a profound intoxication with diphtheria poison. For this reason Heubner thinks that it would be more appropriate to designate the disease "diphtheria gravissima, or diphtheria maligna."

Bacteriologic examinations in these cases show that nearly pure cultures of diphtheria bacilli may be found; the pyogenic cocci may be absent. In a certain proportion of cases streptococci or staphylococci are present. Some physicians maintain that the severe symptoms are due to secondary infections, principally with the streptococcus. These cases present the appalling picture of the disease which is so familiar to most physicians.

Associated with the local symptoms are severe symptoms of general toxemia and extreme prostration.

Cardiac complications may occur in the mild as well as in the severe forms of the malady. In general, we distinguish: 1, heart paralysis occurring early; 2, heart paralysis occurring late. The first group of cases occur in children who suffer from the grave or septic variety of the disease and are nearly always fatal. The other cases are those in which death takes place after the patient has apparently recovered, i. e., on the third, fourth, or as late as the sixth or seventh week. The most feared of the cardiac complications are those which occur after the local disease has disappeared or the patient is in the midst of the convalescence. If the pulse becomes unusually rapid or very slow during convalescence, the condition of the heart should be ascertained as nearly as possible. More important than a change in the number of pulse beats is a disturbance of the normal rhythm. The pulse in children may be irregular in health, for example, during sleep, or during crying, and under a variety of conditions. The irregularity of the pulse in diphtheria is characteristic; it intermits for one or two beats, or it may become double. Auscultation over the heart frequently reveals an accentuation of the second pulmonic tone; frequently a murmur is heard which is almost always systolic in time. The pathologic condition in the heart causing this murmur has not been satisfactorily ascertained. The heart beats become slower and slower; the patient passes into a comatose state which terminates fatally. Sometimes the cases are more protracted, attacks of syncope occur, and the case usually terminates suddenly, fatally, when the patient attempts to sit up, to move in bed, or to cough. A small proportion of these cases recover after a prolonged convalescence.

Since the mortality from diphtheria has been diminished by the general use of antitoxin, the heart is favorably influenced by this agent, because it is believed that the common cause of death from this disease is due to some heart lesion.

Nephritis is a most frequent complication, and usually begins at the height of the disease. Albuminuria is present in nearly all of the severe cases that have come under observation. There are large quantities of albumin and casts. Anasarca and uremia, though they occur less often in this disease than in scarlatina, are sometimes noted. The albuminuria is not caused by the administration of antitoxin, as was formerly believed. Albuminuria is an expression of the diphtheria toxemia, though it is observed that since the use of the antitoxin the severe cases of nephritis are becoming less frequent.

The author then dwelt upon the diphtheritic paralyses, saying that these manifested themselves clinically as: 1, early diphtheritic paralysis; 2, post-diphtheritic paralysis, and 3, the hemiplegic forms. These varieties were discussed at length.

SOME RESULTS OF BACTERIOLOGIC DIAGNOSIS OF DIPHTHERIA.

DR. F. E. WYNEKOOP contributed a paper on this subject. Cases which clinically seem to be tonsillitis, on bacteriologic investigation, are often found to be more grave infections. On the other hand, what appears to be diphtheritic inflammation is, in some instances, but extreme manifestation or less serious disorders.

Bacteriologic methods are of the very greatest importance in the diagnosis of all pathologic conditions of the throat. They are the means of a scientific diagnosis, and thus make possible a rational, effective treatment. During the past few years many thousand cases of suspected diphtheria have been examined microscopically in Chicago's municipal laboratory, and results obtained from a consideration of 500 examinations, made within the last few months, represent in a fair degree the results obtained during the entire period the city has been making such diagnoses. Of the cases tested, about 36 per cent. were

true diphtheria. The percentage does not seem high when it is remembered that in the majority of instances in which an examination was requested, the physician in charge held a suspicion that the Klebs-Loeffler bacillus might be present. Staphylococci and streptococci were found in 52 per cent. The influenza bacillus was present in 5 per cent. of the examinations, the pneumococcus in 4 per cent., and miscellaneous organisms in 3 per cent. Those which were demonstrated to be diphtheria represented all grades of severity; many with symptoms so marked that a clinical diagnosis could be made with little difficulty; others with manifestations so mild that they would pass for simple inflammations. Indeed, a probable clinical diagnosis of tonsillitis was given in 16 2/3 per cent. of the cases found to be genuine diphtheria. The staphylococcus and streptococcus infections also presented considerable variation in severity. A few exhibited symptoms of a grave character, and a goodly number were of a moderately serious nature, so much so that a probable clinical diagnosis of diphtheria was made in 32 per cent. of these affections. The influenza bacillus may produce a condition of the tonsillar and pharyngeal mucous membrane simulating diphtheritic inflammations—redness, swelling, pain, and a well-defined membrane. In 25 per cent. of the influenza throats the manifestations were sufficiently characteristic to warrant the clinical diagnosis of diphtheria which was made by the attending physician. The pneumococcus at times produces a diphtheritic condition, a membranous inflammation which is not easy to distinguish from true diphtheria. A clinical diagnosis of diphtheria was made in 40 per cent. of the pneumococcus infections.

DR. FRANK BILLINGS directed attention to the ashy-gray pallor which occurs early in diphtheria, associated with weakness of the child, as manifested by a feeble voice, rapid or irregular respiration, and rapid pulse. In these cases, beginning early, even though the bacteriologic examination be negative, he gives antitoxin in all throats that show any membrane whatever.

California Academy of Medicine.

September Meeting.

UNILATERAL HYDRONEPHROSIS FROM INTRAVESICAL TUMOR.

DRS. TAIT AND CAGLIERI presented some specimens, removed at post-mortem. The patient, a woman, aged 74, presented very marked diffuse atheroma, but no history of either renal or vesical lithiasis, nephroptosis, or traumatism. In November, 1898, she first noticed what she called a painful lump in the right hypogastric region, immediately below the anterior border of the liver. This very rapidly increased in size, but the pain did not increase in due proportion, nor did it become constant. Hematuria was first noticed shortly afterward, and occurred several times during the next five months. Dr. Tait examined the patient in May, 1899, and detected a tumor, manifestly of renal origin, irregular in outline, movable, slightly painful on palpation, and approximately 20 by 25 cm. The patient had never failed to find the mass since the day she first noticed it. The urine averaged 1200 to 1500 grams daily, and contained albumin and a few blood-corpuscles. The diagnosis of carcinoma of the right kidney was made. On account of her advanced age and marked atheromatous condition no operative measure was considered, and she died three and one-half months later of pulmonary congestion.

The necropsy showed an enormous hydronephrosis on the right side, not a trace of the kidney parenchyma being detected. The corresponding ureter was dilated in its upper two-thirds, to four times its natural size, and the lower one-third contained blood clots. There was no stone, stricture, torsion nor adhesion in the course of this ureter. On opening the bladder the cause of the hydronephrosis became immediately evident: a soft papillomatous tumor had developed at the site of and surrounding the right ureteral orifice.

Dr. Caglieri made slides from the tumor, which do not seem to indicate a malignant growth. Hydronephrosis from intravesical tumors is well known, and in fact is described in many elementary text-books. This, however, is the first case Dr. Tait has seen in which the vesical tumor was not malignant.

The case illustrates the possibilities of error in the differential diagnosis of renal tumors, and also the absolute necessity of instruments of precision and of careful chemic and histologic examinations in the study of such cases. Had the cytoscope been resorted to in the case here reported, the diagnosis would have been cleared up instantly.

Dr. Guido Caglieri spoke of the patient's heart. The question of the occurrence of centric hypertrophy of hollow organs has been disputed for some time, and he believes it is now granted to be a fallacy, with the possibility of the single exception in the case of the heart. He said that in the London University Museum there is a specimen labeled "concentric hypertrophy of the heart," and if it is such, it is the only specimen with which he is acquainted. When the heart of the patient under discussion this evening came into view at the autopsy, he was surprised at its weight and its small size. It was very heavy, but not at all large. The left ventricle, while about normal in size, possessed an extremely thickened wall, a small cavity, and at the basal orifice a ring of calcareous deposit.

He wished to share with Dr. Tait the responsibility for the diagnosis of malignant growth of the kidney. After the autopsy there was nothing to really make one suspect a malignant growth of the kidney, except the age of the patient, taken in connection with the tumor and the pain. He, too, thought that had the cystoscope been used the correct diagnosis would undoubtedly have been made. A correct diagnosis would not, however, have altered the status of the case in the least, for the age and condition of the woman rendered any operative interference out of the question.

DR. D. W. MONTGOMERY said that it is not at all easy to make a differential diagnosis between malignant and benign growths of the bladder, even with the cystoscope. So many of the vesical growths start as simple benignant tumors, and eventually become malignant, that simple inspection even with cystoscopic aid is hardly enough on which to make a diagnosis. Albert of Vienna called attention to the fact that these malignant tumors of the bladder usually occur at the base of the viscus, and that they to a certain extent bore down into the subjacent tissue and implicate the mucous membranes of the rectum. Normally this membrane is very freely movable, but when a malignant growth is above and making pressure on it, it loses this free elasticity. He introduced his finger into the rectum of a patient presenting a doubtful diagnosis and at once expressed the opinion, based on the feel of the mucous membrane, that it was a case of malignant growth of the bladder. Subsequent autopsy showed the truth of his assumption. This sign would not be of so much value in women, for the reason that the tissues above the vagina are normally less freely movable than are those above the rectum. Dr. Chismore has a very ingenious way of treating these cases of neoplasm of the bladder when the factor of hemorrhage is an important one, he said. He simply grasps the shreds of the tumor in the eye of his lithotrite and twists them off. The torsion prevents free hemorrhage, and it is surprising how much relief he secures by this procedure. Many of his cases so treated go for a long time with no hemorrhage. When it recurrs he repeats the process.

DR. THOS. W. HUNTINGTON was of the opinion that the proper diagnosis could have been made correctly by the use of simply the old and well-recognized methods of examination. When mechanical devices are obtainable and are capable of assistance, they should be used; one should not, however, employ them to the detriment of his sense of touch.

DR. ALONZO E. TAYLOR thought a section at the base would add more light to the somewhat obscure question of the true pathology, and that the tumor was cylindrical carcinoma, polymorphic cells being visible, which are known to be suggestive of these growths; also penetration of the basic membrane exists, and interstitial infiltration and polynuclear leucocytes.

DR. J. HENRY BARBAT spoke of a patient, the opening of whose bladder demonstrated the value, or rather the lack of the value of the cystoscope. There was considerable hematuria and the diagnosis was rather difficult. With the cystoscope what appeared to be a papilloma at the base of the bladder was seen; when touched it bled. On operating he found the lateral lobes of the prostate greatly enlarged and the central lobe normal. There were a few very small excrescences on the mucous membrane, which might have been commencing papillomata. He is more and more impressed with the folly of thinking that we can look through the cystoscope and make anything like an accurate diagnosis of the conditions within the bladder.

DR. PHILIP KING BROWN, as some discussion arose as to the value to be placed on measures which purported to obtain the urine from the two kidneys or from the two ureters, unmixed, mentioned a case in which Dr. Chismore, with the Harris instrument, obtained the supposedly unmixed urine of a man on two different occasions. Analysis showed the samples of the two urines taken at the different séances, to be practically a safe guide, as the results did not materially differ. The urine from one kidney was exceedingly scanty, while that from the other was plentiful. The diagnosis based on these examinations was later confirmed. He had also made use of the method personally on several occasions and thought it was quite reliable.

DR. DUDLEY TAIT, in closing the discussion—Dr. Huntington has given us a very good demonstration of his ideas, but his closing statement is rather in conflict with what he said at first. I admit that the diagnosis should have been made. Had it been, however, it would not have altered the eventual result of one case. But Dr. Huntington said that purely rational means would have disclosed the hydronephrosis, and that then the ureter could have been explored. He could not explore the whole course of the ureter without making use of the cystoscope and the ureteral sound or catheter, unless he resorts to a formidable operation. In regard to X-ray examinations as an aid in the diagnosis of renal calculi, Dr. Philip M. Jones has examined some patients for me, in whom the clinical picture of stone was clear. In two cases the results were purely negative, and in these I believe the calculi are uric acid accretions. Obviously they would not be detected by the X rays.

DR. HUNTINGTON said he did not mean to advocate the exploration of the ureter by means of the cystoscope, nor yet by laying open the abdomen over its whole course. It is perfectly possible to exclude ureteral obstructions, etc., by purely rational methods and without operation or catheterization. On being asked what means he would employ in the exclusion of the ureter, without making use of the cystoscope or operating, he said that absence of pain, absence of the pain and painful sensations on pressure, and absence of all subjective signs implicating the ureter, would be sufficient.

DR. S. J. HUNKIN mentioned the case of a man recently in his care. There was pain in the right side, hemorrhage, etc., and pus could be found coming from the right ureter. The case was referred to Dr. Chismore, who advised operation. The man refused. Later he came again and requested operation and it was then refused. He died shortly after and it was discovered, on autopsy, that he had but one kidney, in the median line, the ureter from which branched at about its middle point. Dr. Hunkin asked what would have been the course pursued in such a case. The kidney, he stated, was one mass of small stones and no kidney tissue could be discovered.

ECTOPIC TESTICLE.

DR. DUDLEY TAIT exhibited a testicle which he had removed at autopsy, from a man of 71. It was undescended and had always been in the inguinal canal. It had given him no trouble until a short time before Dr. Tait saw him. Three days after using a catheter for overcoming retention due to prostatic enlargement, he noticed pain in the right inguinal region, and was ordered ice applications and rest. The trouble was supposed to be an epidydimitis of the undescended testis. All trouble subsided in eight days and he went about his ordinary duties. He died from pulmonary consumption three and one-half weeks later, and a suppurative epidydimitis of the undescended testis was found. Spermatozoa were found in its tissue. The contained pus was sterile. Dr. Tait also referred to the method of placing the testicle in an extra peritoneal pocket, in the modified Bassini operation for hernia, as first advocated by Dawbarn and subsequently adapted by de Gormo and Lanphear.

DR. HUNTINGTON said the question of ectopic testis is of particular interest as it relates to the changes in the testis in late life. He used to extirpate these testicles, but has recently employed the method suggested by Dr. A. D. Bevan, Chicago. (See JOURNAL, September 23.) The vas is loosened high up into the peritoneum and thus the extension of the cord is permitted, allowing the testicle to be replaced, or rather *placed* in the scrotum. It seems possible in this way to put the testis into the scrotum and have it remain there, which is certainly a better plan than extirpation. He asked whether it is probable that tubercular disease of the testis could be the primary tubercular lesion, with constitutional tubercular disease following as a secondary invasion. He now has under observation a man who developed tubercular disease of the testicles some years ago, and has only within the last two years exhibited any symptoms of pulmonary tuberculosis. Certainly three or four years elapsed between the development of the tubercular disease in the testicles and its appearance in the lungs and larynx. The present trend of authoritative opinion is to operate when the operable lesion is one of primary infection, as for instance primary joint tuberculosis, but that if the local lesion is secondary to lung involvement operative measures are not advisable.

DR. TAIT said "the method of treating the ectopic testis in hernia operations described by Bevan, originated with Broca, several years ago."

DR. HARRY M. SHERMAN said it was better to remove such a testicle than to allow it to remain; but better to place it in the scrotum when such a course was possible. In the abdomen the testicle may give rise to unpleasant consequences.

DR. HARRY M. SHERMAN, in reply to the question raised by Dr. Huntington as to tubercular infection of the testis, thought we might consider tubercular infection of the testicle somewhat in the same light in which we consider tuberculosis of bone. In bone tuberculosis, about 21 per cent. of the cases are of primary invasion; the other 79 per cent. are secondary to tuberculosis somewhere else. In Dr. Huntington's case it would be very difficult to say which infection was primary. Glandular infection elsewhere, with broken-down tubercular tissue, may have led to the secondary involvement of the testicles. Dr. George Chismore says that it is not wise to interfere with tuberculosis of the testicles, and certainly he has convinced me that if left alone they do remarkably well. He remembers one case in particular in which Dr. Chismore stood between the man and an operation, and the man has now lived a thoroughly useful life for many years and is in the best of health.

DR. PHILIP KING BROWN said that there may be a primary infection of the testis, or rather of the epididymis, with infection of the lungs following as a secondary lesion. Tuberculosis of the epididymis is not at all rare, though it is not common General, or at least pulmonary invasion is very liable to follow any operative measure except complete removal. Curetting of tuberculous testicle is very commonly followed by an extension of the disease.

DR. A. E. TAYLOR thought that the mathematical chances of the tubercular invasion of the testicles in the case mentioned by Dr. Huntington being one of hematomatous infection, were very small indeed. Here the infection may have been from some primary infection in neighboring tissue, but was probably secondary to a tuberculous infection of the lungs, which had remained quiescent for a long time. It is absolutely impossible to tell within a very great range of time, as to the date of a tuberculous infection of the lungs. It may be weeks or months or years old, when examined at the post-mortem.

DR. TAIT said that the treatment of tuberculous lesion of the testis and epididymis was very thoroughly discussed in a series of meetings of the surgical society of Paris. The great majority favored conservative methods and the conclusion was arrived at after an extensive trial of the radical method. These same authorities would, however, adopt radical measures in renal tuberculosis primary.

Mississippi Valley Medical Association.

Abstract of Proceedings of the Twenty-fifth Annual Meeting, Held at Chicago, Oct. 3-6, 1899.

(Concluded from Page 1043.)

TREATMENT OF PULMONARY TUBERCULOSIS BY INHALATION OF ANTISEPTIC NEBULAE.

DR. HOMER M. THOMAS, Chicago, read a paper with this title. Nebulization is supportive only, but is of great value as a secondary factor in the treatment of tuberculosis. It aids in establishing a barrier around the tubercular area by stimulating cellular structure to resist the germs and their toxins. The beneficial effects of nebulization are to: 1, control the cough; 2, relief of dyspnea; 3, intimate contact of the nebulæ with

much of the respiratory cavity, and, 4, inhibition to the extension of the tubercular foci.

Various remedies were mentioned, and special attention called to formalin in from 4 to 20 per cent. solution, depending on the patient's ability to stand a weak or strong solution. The nebulæ penetrate wherever the air does and are, by means of phagocytosis, conveyed through the blood and lymphatics to the tubercular overgrowth. While they do not reach the encapsulated tubercular area, they inhibit extension of the disease. The atmosphere of the room as well as the respiratory passages must be saturated with the medicament.

Clinical experience having proven the value of vaporized medicaments in tuberculosis, further trial and investigation are justified.

DR. T. B. GREENLY, Meadow Lawn, Ky., stated that he had for some time past been using a mixture of formaldehyde and ammonia with the most salutary results. The ammonia enables the patient to bear more of the formaldehyde vapor and the system thus becomes more rapidly immune to the toxins of the tubercle bacillus. He has lately been using urotropin, a combination of formaldehyde and ammonia, and it, inside of ten to fifteen days, thoroughly disinfects the sputum, and it is absolutely free from bacilli. This treatment, with the addition of tonics, increases the patient's appetite, the cavities heal more rapidly, and a speedy recovery results. Urotropin acts equally as well in bone tuberculosis. He also uses iodin and theobromin in phthisis, with massage twice daily so as to get the action of the iodin in the circulation without imposing on the stomach. Perfect satisfaction has followed this treatment in his experience of over one hundred cases of tuberculosis.

DR. CHARLES L. MINOR, Asheville, N. C., called attention to the fact that a combination of formaldehyde and ammonia completely destroys the action of the former, and therefore the good results which Dr. Greenly obtained could not have been due to the inhalation of formaldehyde. He expressed his gratification that Dr. Thomas regarded the inhalation of medicated vapors as an adjuvant only. In his experience patients who inhale simply the air around them did as well as though medicated vapors had been used, and pure air has the advantage of producing no irritation whatever.

DR. J. M. PATTON, Chicago, congratulated the essayist on the conservative view taken of the therapeutic effects of inhalation of medicated vapors. Neither inhalation, nor the injection of different oils into the respiratory tract has given any definite results as far as a cure is concerned, which really can not be expected in view of the existing pathologic changes.

Councilman has demonstrated a collateral zone of congestion around the tubercular area, which contains no tubercle bacilli, but has sufficient circulation to admit of absorption and poisoning. These areas prevent anything from reaching the tubercular area itself. The failure of serumtherapy demonstrates the futility of reaching these areas through the circulation; nevertheless beneficial results follow the use of these measures as they lessen the cough, diminish bronchial secretion and improve the respiratory function. In chronic bronchitis great good follows the use of vaporization, as anything that will lessen bronchial secretion will correspondingly lessen the dangers of secondary infection from the tubercular areas.

As to the possibility of considerable good arising from the absorption of the vapor through the bronchial membranes into the system, Dr. Thomas is illogical.

DR. THOMAS, in closing, expressed his gratification at hearing the good results which Dr. Greenly has had with formaldehyde and ammonia. Inhalation is advocated only as an adjuvant, the only value, if none other, being in the deep breathing which it excites and the psychic impulse created in the use of nebulæ, which is not the case when air is used. This effort at deep breathing is very much to be desired in the impaired respiration of tuberculosis. The author expressed the belief that "we are strong in medication, and weak in therapeutics."

DO WE NEED TO THINK?

DR. WM. O'NEAL MENDENHALL, Richmond, Ind., read a paper with this title. He presented a report of a peculiar case of hereditary nervous diarrhea in a young man, indirectly caused by a fall of the mother, producing a fracture of the coccyx. Treatment consisted of strychnin, to act as a nerve tonic, and ergot to act on the circular muscle fibers of the bowel, regulation of diet and hygiene. A complete recovery resulted.

THE EVILS; THEIR CAUSES AND THE REMEDY THAT WILL EDIFY MEDICINE IN THE UNITED STATES.

DR. A. M. OSNESS, Dayton, Ohio, read a paper, in which the evils are held to be "mushroom schools," antagonistic pathies, overcrowding in the profession, lack of scientific spirit among medical teachers, undue ostentation, and unscrupulous intrigues in the profession. The causes of these are: 1, paltry remuneration for professional services; 2, the fallacy of a profitable notoriety. The author suggested as a remedy the regulation of schools and professorships, obligatory internships of all graduated, conditioning diplomas revocable for unprofessional conduct, charity hospitals to be under the supervision of medical men, the encouragement of strictly prescription pharmacies.

DR. WM. F. BARCLAY, Pittsburg, Pa., felt that there was an implied disparagement of the American physician. He is of the opinion that physicians in this country compare favorably with those educated abroad, and that our schools and colleges are equal to any and superior to many of the foreign schools. We have the advantage over the foreign physician in thoroughly understanding our own language, but that ought not to be offered as an excuse for any disparagement of American physicians and American institutions. Much that the essayist said is worthy of appreciation, especially his reference to charity work, as it is difficult to know just where charity ends and imposition begins. The points about the dispensing pharmacists were well taken, but much has been done to lessen the demand for proprietary medicines by placing them in the general stores at the least rates. The question as to how to remedy all these evils is a very difficult one to solve.

DR. E. M. EPSTEIN, Chicago, remarked that all American physicians are very well received in Europe. The only remedy for all the evils portrayed by the essayist, in his estimation, is to have representation in the cabinet of the President of the United States, by the secretary, who is to be appointed or elected irrespective of politics. Then we would have some one to speak for us and to look after our interests.

DR. JOHN PUNTON, Kansas City, Mo., believes the remedy rests with the physicians themselves, who must enter politics and be willing to go to the legislature to demand the rights which are due the medical profession, and as long as this is not done we can not expect to be recognized by the Government.

DR. C. M. SKINNER, Hartland, Wis., speaking for the pharmacists, said that they had been forced to resort to counter prescribing, by the doctors, who, in the majority of instances, use their own medicines and even went so far as to dispense hot water bottles, syringes, etc.

DR. C. J. LEWIS, Chicago, agreed with the essayist that it is impossible for a scientific investigator to be engaged in any commercial pursuit at the same time. We certainly ought to have a supervising mind in the Cabinet at Washington, and in this way only can our many professional evils be remedied.

TWO CASES OF TYPHOID FEVER WITH UNUSUAL COMPLICATION IN VERY YOUNG CHILDREN.

DR. E. B. MONTGOMERY, Quincy, Ill., presented this paper, reviewing the literature on typhoid fever occurring in infancy and childhood. He reported two cases. One, aged 9 months, presented symptoms simulating a tubercular meningitis, recovery taking place on the twenty-third day. The second case developed a suppurative parotitis about the twenty-fifth day, with aphasia. After surgical treatment of this condition recovery resulted on the forty-fourth day. A search revealed but three cases in which there was involvement of the submaxillaries. He also mentioned one unreported case which occurred in the practice of Dr. Rook of Quincy.

DR. J. O. MALSBURY, Peru, Ind., believes that typhoid in infants under 6 months is more common than is generally supposed, and that cases are often wrongly diagnosed, being termed "catarrhal fever." A very important diagnostic point is to determine the proximity of typhoid in the neighborhood, or whether it has existed in the family some months prior to the present case. This has occurred in his practice several times.

DR. ARCHIBALD CHURCH, Chicago, believes that meningeal symptoms are very common in typhoid, but are taken too much as a matter of course, and little attention paid to them. It has been proven by culture experiments that the typhoid bacil-

lus or its product enters the cerebral cavity. A certain amount of cerebral disturbance is expected in every case of typhoid, and it is the symptoms which make the diagnosis between typhoid and meningitis difficult. In the case presented there was no doubt an invasion of the cranial contents the same as occurs in the intestines and elsewhere. That recovery takes place after a severe invasion is proved by noting the percentage of recoveries from typhoid with marked cerebral symptoms.

FURTHER OBSERVATIONS ON THE TREATMENT OF THE ABDOMINAL VISCERA THROUGH THE COLON.

DR. FENTON B. TURCK, Chicago, read a paper in which he dwelt particularly on the importance of colonic lavage in the treatment of all diseased conditions of the bowel. He explained his method, very fairly illustrating it by a series of experimental reports.

DR. WM. F. BARCLAY, Pittsburg, Pa., expressed himself as being very much opposed to the indiscriminate injection of large quantities of water into the bowels. He was pleased to learn that Dr. Turck uses only a small quantity of water, as large quantities have in his experience proven to be injurious. He especially condemned the use of syringes, as they destroy the muscular tone of the bowel and a constipation is set up which is almost irremediable. Cathartics, too, are unpleasant to use, but cathartic medication in conjunction with regulation of diet is to be recommended.

DR. T. WERTZ, Evansville, Ind., sees no reason why the bowel should not give out the same as any other organ. Many persons are incapacitated for business on account of constipation, and from the constant use of cathartics their stomachs have become irritable, so that they are obliged to resort to water enemas. In cases where there is a paralysis of the bowel or insufficient peristalsis, water enemas are the remedy. Many lives have been prolonged by the use of food enemas when the stomach is non-retentive and needs a rest.

DR. C. J. LEWIS, Chicago, thinks that there is a general agreement at the present time that the saprophytic bacteria in the intestinal tract are largely the cause of appendicitis. Colonic lavage facilitates diagnosis, as we need only to unload the bowel of its accumulated bacterial infection in order to make possible more accurate palpation of the appendix and thus determine its condition of inflammation.

DT. THOMAS J. SCHUELL, Parnell, Iowa, for many years believed himself to be the originator of colonic lavage in the treatment of appendicitis. The usual idea is to unload the cecum, but by using water at 110 F., it will not only unload the cecum and colon, but it will at the same time excite the peristalsis of the cecum as well as the appendix. Many cases of appendicitis are due to impaction of the colon producing paralysis of the muscle fibers and the formation of a ball-valve action of the cecum and by means of a slight shock, such as jumping, the fecal matter is forced into the appendix, bacterial decomposition sets in, inflammation, necrosis and pus formation. Colonic flushings should be given every three or four hours for the first twenty-four to thirty-six hours, and after four or five flushings beneficial results are very apparent.

DR. TURCK, in conclusion, emphasized the value of using the colon as a means of treating the abdominal viscera. It is not the quantity of water so much as the temperature which procures the characteristic reaction. Hot water draws out the water from the intestines, and the original injected quantity is thus increased. The temperature raises the body temperature two or three degrees, and, like cold, is a vasomotor stimulant. Fecal matter is a normal stimulant to peristalsis and the same effect can be produced by artificial stimulants. This can be done by means of small quantities of water, and when it is desired to produce gymnastics of the bowel, hot air is urged, and it acts on all the abdominal viscera at the same time, as a stimulant.

Toronto Clinical Society.

Oct. 4, 1899.

DR. J. A. TEMPLE called the attention of the members to the fact that this was the first meeting of the Society since the death of one of their most prominent members, the late lamented James Elliott Graham, and moved for a committee to prepare a memorial to the widow and family of the deceased.

USE OF PEPTONE IN TYPHOID FEVER.

DR. FRED FENTON read a paper on this subject and recorded the history of two cases in which he had employed this plan of treatment successfully. One patient was a man of 21 and the other a boy of 11 years old. On account of difficulty in swallowing, in the first case, and lack of desire to take nourishment in the second, both patients were fed per rectum, exclusively. The whites of hard-boiled eggs with milk peptonized by pepsin and HCl were employed in the first case, and the patient put on flesh even during the presence of fever. In the second the whole of the egg was used and the preparation was made with liquor pancreaticus. When the bowel became irritable, a few minims of liquor opii sedatives were used. Both patients developed pneumonia. Recovery was noted in both.

DR. W. B. THISTLE, in discussiong this case, stated that he had never had occasion to revert to rectal feeding in this disease. He found that the milk prepared with the peptogenic milk powder answered exceedingly well and was well borne by the stomach.

MICROSCOPIC DEMONSTRATION.

DR. GRAHAM CHAMBERS then demonstrated, microscopically, the *microsporon Audouini* and the *trychophyton miaglosporon*, and stated that 70 to 80 per cent. of ringworm in the scalp of children is due to the presence of the microsporon Audouini. Cases due to this spore can be cured in from two to three months, while those due to the small spore variety will probably take a couple of years.

FRIEDREICH'S ATAXIA.

DR. W. B. THISTLE reported a case of this in a boy of 10 years, which had first appeared at 4 years of age. The father was healthy, a German, and had never had syphilis; no history of the grandparents could be obtained. Two aunts, sisters of the father, were afflicted with the same complaint, as was also an elder brother of 14, and in whom the disease first appeared at 7 years of age. The condition has come on gradually and the patient presents peculiar lack of facial expression, his head inclines to one side and there is marked incoördination of the muscles of the upper extremities. Marked hammer toe and equino varus are also to be noted. There is no nystagmus and no scoliosis. Incoördination in the lower muscles is also well marked. Dr. Thistle then dwelt minutely on the symptoms, diagnosis and prognosis of this disease.

DR. A. J. HARRINGTON exhibited a femur taken from an old lady of 78 years who had died as the result of a fracture of this bone. It showed marked friability.

Orleans Parish Medical Society.

New Orleans, Sept. 23, 1899.

AMPUTATION VS. EXCISION OF ELBOW.

DR. HERMANN B. GESSNER read a paper entitled "Amputation Through the Arm versus Excision of the Elbow; a Case of Conservative Surgery." This paper will appear in the JOURNAL.

HARRIS' URINE SEGREGATOR.

DR. R. MATAS exhibited the segregator invented by Dr. M. L. Harris of Chicago for the purpose of obtaining, separate, the urine from each kidney, as previously described in the JOURNAL.

Dr. Matas had used the instrument successfully in two cases: in one, a case of suspected malignant disease of the kidney, clear urine had been obtained from one side, but from the other blood-tinged urine containing particles now being examined by a pathologist; in the other case, a diagnosis of pyelitis in one kidney was determined by this method, while the other was shown to be doing such vicarious work as would permit the safe removal of its diseased fellow.

PUERPERAL ECLAMPSIA.

DR. T. S. DABNEY reported two cases of this condition, occurring in primiparæ under 20 years of age, within two weeks of term; in both the os had been dilated and the child delivered with forceps; both patients were recovering. In the one, veratrum viride had been administered; the other had been treated with chloral and bromids given by enema.

SYMPTOMS FROM USE OF VAGINAL DOUCHE NOZZLE.

DR. C. JEFF MILLER detailed two cases in which unpleasant symptoms had followed the use of a vaginal douche-nozzle provided with a terminal opening only. In one instance a married woman, aged 20 years, who had borne a child eight months before, at the close of a menstrual period, took a douche of warm water through a nozzle of the kind referred to. She was taken with a cramp in the abdomen, attended with such excruciating pain as almost caused loss of consciousness. The patient was confined to bed one week, suffering from localized peritonitis. There was, on the right side of the pelvis, a mass the size of an orange, which had gradually disappeared. The uterus was found a little prolapsed and retroverted, the fundus pointing toward the promontory of the sacrum.

The other patient was a colored woman who was confined to her bed for four days after using an open-end douche-nozzle for vaginal irrigation at the close of a menstrual period; she had suffered from peritonitis, with tenderness on the left side of the pelvis.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

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Foreign Postage 2.00
Single Copies . . . . . 10 Cents

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SATURDAY, OCTOBER 28, 1899.

THE FORMATION OF VISCERAL CASTS OR MOLDS ON SEROUS MEMBRANES.

Bamberger, nearly forty years ago mentioned the enclosure of the liver in a delicate membrane, without noteworthy alteration in structure or function of the viscus, although the condition may be complicated by the development of symptoms of interstitial hepatitis. Some twenty years later the subject was again taken up by Curschmann, who attributed the resultant ascites to compression of the liver in consequence of a chronic fibroid perihepatitis. In common with cirrhosis of the liver the morbid affection under consideration is attended with reduction in size, change in shape, and increase in density of that organ, together with ascites. The course of this peculiar disorder is far more protracted than that of cirrhosis, and its onset is sometimes acute, with symptoms of local peritonitis. Cases have been reported, further, by a number of other observers. As the disease may persist for a considerable number of years, the changes found at autopsy are usually so old, so advanced and so extensive that it is difficult in an individual case to determine the primary seat of the disorder. Cases, therefore, in which death takes place at an early stage, possibly in consequence of some intercurrent disease or complication, are of especial interest. An illustrative instance is reported by Rose[1], occurring in a shoemaker, 56 years old, who came under observation on account of copious hematemesis. The patient complained of shortness of breath on physical exertion, especially on ascending stairs, and of some epigastric oppression after the ingestion of large meals. He admitted a history of alcoholism, but denied that of syphilis. He had been dropsical three years previously, but was no longer so. The man was slightly icteric, and apparently anemic. The pulse was 66, regular, slow, of moderate tension and sclerotic. The general nutrition was impaired. The lower border of the liver was distinctly palpable four fingers' breadth below the costal margin. The spleen was also palpable. The abdomen was distended, but free from effusion. The urine contained neither albumin nor sugar. There was no vomiting. The temperature was subnormal. The condition of the patient continued satisfactory, until he was suddenly seized with a chill, followed by elevation of temperature, and perturbation of consciousness, which progressed to coma, and finally terminated in death. On post-mortem examination the calvarium was found to be thick, the pia mater turbid, the brain moist. The heart was dilated, the pericardium normal, and the myocardium brown, softened, and striated in places. The leaflets of the aortic valve were slightly calcareous, and the ascending aorta was atheromatous. The uppermost portion of the right lung contained a smooth, glistening, white cicatrix of cartilaginous consistency. The pleuræ were otherwise normal. The lungs were edematous, and the left lower lobe pneumonic. The peritoneum was smooth and glistening, except along the ascending colon, where it was slightly dull, but free from adhesion or thickening. The lower surface of the liver was adherent to the stomach, though easily separable. The anterior portion of the upper surface was free, while the posterior portion was adherent to the diaphragm, though readily separable, except at a few points. The entire upper and the anterior half of the lower surface of the liver were covered by a smooth, dense fibrous coating. The anterior border of the liver was rounded, and the capsule was here 2 mm. thick, and as white as porcelain. Posteriorly it grew thinner, becoming finally translucent, like milk-glass. Only the posterior aspect of the liver was free from the exudate, and this was smooth. The organ weighed 1850 grams, and measured 25 by 17 by 7 cm. Section and microscopic examination disclosed the appearances of typical marked cirrhosis. The spleen, especially on its convexity, was covered by a white, glistening capsule, like that in part surrounding the liver. The organ was adherent to the stomach and the diaphragm, though separable from each without much difficulty. It was large, soft and friable, weighing 580 grams, and measuring 16 by 12 by 4 cm. The mucous membrane of the stomach was free from ulceration, erosion, or varicosity. At the junction of the sigmoid flexure with the colon the serosa on the free surface opposite the mesosigmoid presented a glistening, whitish cicatricial thickening, quite circumscribed, and without adhesion, and similar to that of the liver, spleen, and right lung.

The peculiar form of mold or cast described may be the only or the most important feature of the morbid

[1] Berliner Klin. Woch., Sept. 18, 1899, p. 825.

condition under consideration. It is usually present in several serous cavities simultaneously, and it may thus be designated a polyserositis. Deformity of the liver and ascites are secondary to fibrous inflammatory changes in the capsule of that organ. In the cases heretofore reported, the pleura has been almost invariably involved, and especially on the right side, and there has been presented the triad of symptoms, viz., involvement of the capsule of the liver, of the pericardium, and of the right pleura. Sometimes the spleen and the left pleura are involved. This association of lesions suggests an extension of the morbid process by contiguity. In the case reported, however, the lesions were multiple, and disseminated, and the possibility of extension by way of the lymphatics naturally suggests itself. The liver is at first enlarged, but subsequently it becomes diminished in size, and deformed. Its structure remains normal, or undergoes slight atrophy. The organ may acquire a nutmeg appearance, and the perihepatitis may eventually invade the parenchyma. The etiology of the disorder under consideration is exceedingly obscure. It sometimes follows infectious disease, and sometimes it appears as a local peritonitis. It may further follow abdominal diseases, such as cholecystitis, cholelithiasis or perityphlitis.

ARTIFICIAL PRODUCTION OF NORMAL LARVAE FROM THE UNFERTILIZED EGGS OF THE SEA URCHIN.

Modern investigations into the mechanism of life phenomena have yielded results of great value. One of the most prominent and original of the investigators in this field is Jacques Loeb, in the Hull Physiological Laboratory of the University of Chicago. Loeb's recent studies into the conditions which influence embryonal development and growth, and into the nature and process of fertilization, are undoubtedly of fundamental importance. He shows[1] that alkalies and acids exercise a pronounced influence on the development of certain salt water larvæ (*Arbacia*), alkalies hastening their growth. The quantity of alkali necessary is remarkably minute. The addition of 1.5 to 2 c.c. of a decinormal NaOH solution to 100 c.c. of sea water suffices. Acids, on the other hand, retard development and growth. Loeb regards the cause of this action of dilute alkalies and acids on development and growth as due to the fact that weak alkalies favor the processes of oxidation in the living substance while acids diminish oxidation. Alkalies favor, acids retard the synthetic processes. Now, local differences in the alkalinity, or acidity, of the germ are perfectly possible. Variations in these conditions must necessarily occur in connection with metabolism. Differences in the quantity of alkali and acid in the various places of the growing embryo may well be a reason for the unequal growth necessary for differentiation in the embryo. At the same time there may be other chemical differences in the various areas of embryonal growth.

[1] Archiv f. Entwickelungs mechanik der Organismen, 1898, vii.

In another paper[2] Loeb describes the artificial production of normal larvæ (*Plutei*) from the unfertilized eggs of the sea urchin. It has for some time been known that the unfertilized eggs of echinoderms, worms, and arthropods begin to divide when left for a considerable time in sea water, but in no case did this process proceed to the formation of embryos. By placing the eggs of the sea urchin in a mixture of about 50 per cent. $^{10}/_{8}n$ $MgCl_2$ with about 50 per cent. of sea water, Loeb brought about the same result as the entrance of a spermatozoon. The unfertilized eggs were left in such a solution for about two hours and, when returned to normal sea water, they began to segment and eventually formed larvæ which were normal in every respect. These experiments were, of course, fully controlled. The only difference from the normal in the experiments was that fewer eggs developed and that the development was slower than in fertilized eggs. Hence the unfertilized egg of the sea urchin contains all the elements necessary for its development, the only reason which prevents parthenogenesis being the constitution of normal sea water. All that the spermatozoon needs to carry into the egg for fertilization are certain ions to supplement the lack in the sea water of those which are essential for segmentation and cell division or to counteract those ions of the water which are unfavorable for these processes. It is quite evident that the nucleins of the spermatozoon are not indispensable for fertilization. Loeb thinks it not impossible that a transitory change in the ions in the blood may induce parthenogenesis in mammalians because it is quite possible that here also it is the composition of the medium, the blood, which prevents parthenogenetic development. The observations here referred to indicate that inorganic chemistry deserves more attention from the physiologists than it has been receiving. There are certain facts in pathology which speak in favor of a kind of human parthenogenesis. We refer to the origin of the mixed tumors, or teratomas. The recent histologic studies of Wilms and others have brought forward strong evidence in favor of the ovulogenous and parthenogenetic development of the teratomas of the ovary. With the profound influences in mind which chemical substances exercise on the activities of cells, it lies near at hand to look to local or general variations in the chemical composition of the circulating medium for the explanation of many other tumors and forms of pathologic cell proliferations.

ACTION OF HEPATIC, RENAL AND OTHER CELLS ON PHENOL AND INDOL, UNDER NORMAL AND PATHOLOGIC CONDITIONS.

Experimental observations on the behavior of animal cells toward such substances as indol and phenol have been made by Herter and Wakeman[3]. Their research was prompted by the interest which is beginning to be

[2] Am. Jour. of Phys., 1899, iii, 135.

[3] Jour. of Exp. Med., 1899, iv, 307; JOURNAL, September 30, p. 3, p. 851.

felt in the study of the defenses of the organism, to use this familiar phrase, against damage through chemical agencies. Among the problems which arise in connection with this matter are: the determination of the seat of defensive action, whether in the blood or in the cells; the rôle of different kinds of cells on particular chemical agents; and the nature of the chemical changes which may occur. Naturally more interest is connected with the fate of indol and phenol in the organism than with that of wholly foreign substances. Indol and phenol are also recognizable by delicate color reactions, a fact of much practical value in an investigation of this sort. By mixing solutions of indol and phenol with a definite quantity of finely chopped up organ pulp and of blood, and then applying suitable tests at various intervals, the activity of the pulps and of the blood in causing the disappearance of these substances could be quite readily ascertained. It was found that in all instances the blood, brain, muscle, kidney and liver all exerted some influence in transforming phenol so that it no longer responded to Millon's reagent, the liver being the most powerful, the kidney next and muscle third. Practically the same results were obtained in the case of indol, the blood having less activity than on phenol. This method of testing the action of cells and fluids on indol and phenol is called the contact method. The second method consisted in making intravenous infusions of solutions of phenol and indol. When nervous symptoms appeared the animals were quickly killed and definite weights of organs and of blood distilled and subjected to color tests. The results of the experiments made according to this method show more confusion in the degrees of activity of different organs, the muscle appearing more active than the liver. Satisfactory interpretations of all the results are as yet hard to furnish. Neither can the question as to the nature of the transformation which occurs and causes more or less indol and phenol to disappear when brought in contact with cells, be answered at present. The authors are inclined to regard the changes in indol as due to a process of oxidation; in the case of phenol they regard it as more likely that a loose combination is formed of this substance with the protoplasm of the cells, especially of the liver, which was found to retain its power toward phenol after exposure to the influence of numerous injurious agencies outside of the body. Herter and Wakeman also studied the action of hepatic cells on phenol under pathologic conditions. The effects of prolonged anesthesia, of poisoning by alcohol, ammonium chromate, morphin, etc., and of staphylococcus infection were investigated. They conclude that no pathologic conditions which can be induced in the liver during life are capable of greatly impairing or destroying the activity of its cells in the conversion of phenol. Rather unsatisfactory tests with fatty and cirrhotic human livers did not show any marked deviations from the normal in regard to the action on phenol.

The phenomena above referred to are certainly very interesting. Some degree of light is thrown on the way in which cells of the body may screen the organism from certain poisons.

THE INDEX MEDICUS NOVUS.

Besides the *Jahrbucher, Jahresberichts* and *Centralblatts* published in Germany, we have now a periodical devoted to medical bibliography, the *Index Medicus Novus* of Dr. Doheney, Vienna. This is, so far as we are aware, the only one of its kind at the present time, though indexes of periodic literature in certain specialties may exist. This publication appears fortnightly and purports to give the medical literature of the world, though it is very incomplete as compared to the old *Index Medicus,* and only a very few leading American journals appear to be available to its compilers. The articles are indexed under heads as in the various *Jahrbucher,* no attempt at alphabetic arrangement under these being attempted. The frequency of issue, however, and the consequently more limited number of titles renders this less an objection than might otherwise be the case. As an aid to research in continental European medical literature it will be of value, and possibly may in time develop into a satisfactory substitute for the late *Index Medicus.*

RISKS OF SUMMER RESORTS.

Professor Lindsley of the Yale Medical School, in a recent report, calls attention to the risks run by boarders in summer hotels and seashore cottages from typhoid fever, and to some extent also from other disorders due to neglect of sanitary precautions. The subject is not a new one, but it is one to be kept in mind and a warning coming even after the season of summer outings may be of value in stimulating effort for improvement before next year. Rural sanitation is, as a rule, crude where some attempt at it is made, but very often it is left to Nature exclusively, while human efforts are rather directed to its opposite. The salvation of many rural summer resorts is their brief period of occupation, as Professor Lindsley says, and they afford a very suitable field for the exercise of the supervisory functions of a state board of health. In a commonwealth like Connecticut, whose rural hamlets are so extensively utilized as summer resorts, this is particularly the case.

CATTLE AND CANCER.

Domestic cattle, which have hitherto been so great a food resource in their living and dead products, are now largely under suspicion in both these regards. Tuberculous beef and tuberculous milk we are already warned against, but there may be other transmittable bovine diseases yet to be heard from. One of these is possibly cancer, and Mr. Jasper More, an English member of Parliament, has recently written to the secretary of a British society devoted to the discussion of the subject of cancer. He found, he says, on inquiry among English farmers, that cancer is much more common in cattle than tuberculosis, and that cancerous meat is very commonly sold for food. He proposed to have the matter brought before Parliament had there been any

discussion on tuberculosis, but the opportunity was not afforded him, and he suggests that it might be well to inquire into the question whether cancer may be spread in this way. The transmission of cancer in this way has apparently thus far received little attention, but if the alleged increase of cancer is a real one, it might be well to investigate it. It certainly seems as possible as the vegetable origin of cancer, which has been seriously considered, and would appear to be deserving of study by competent pathologists. The favorite locality for cancer, according to Mr. More's informants, is near the lips or the throat of the animal, and is easily kept from observation while it is sent to the slaughterer. So far as we have observed, this additional pathologic possibility involving our meat supply has received very little medical attention.

"PURE FOODS."

The Washington correspondent of an eastern paper, the *Brooklyn Eagle*, states that the chemists of the Department of Agriculture have of late been giving attention to the numerous breakfast foods that are being so actively pushed before the purchasing public. Samples were obtained of the advertised brands and repeated analyses made, with the result, the correspondent states, "that the official report, which will be issued before long, will show that the makers of these preparations have been so enterprising in advertising their wares as to forget to stick closely to facts." While the analyses proved that there was practically no adulteration, they found that there was no discoverable relation between quality and prices. Some of these preparations are sold at four or five times the cost of the others of the same constitution and equal merit. Oatmeal in bulk, for example, was found in composition and, as far as could be judged, in quality and flavor as good as that sold in packages at a much higher price. It is well in these days of food and diet fads to keep in mind the commercial reasons for the existence of the numerous preparations advertised as "health foods," etc. The forthcoming report of Dr. Wiley will be of interest to medical men who are so often consulted in regard to these articles.

THE ASSOCIATION AND SENN MEDALS.

We desire thus prominently to call the attention of members of the AMERICAN MEDICAL ASSOCIATION to the fact that two gold medals, each of the value of $100, are offered each year for the best essay on some medical or surgical subject. While these prizes have been open for two years, thus far neither has been awarded. One of these is offered by the ASSOCIATION, and is known as the "Association Medal;" the other is offered by Dr. Nicholas Senn, and known as the "Nicholas Senn Medal." The ASSOCIATION offers its gold medal with the following conditions: The competing essays shall be typewritten or printed, and shall bear no mark revealing their authorship, but instead of the name of the author there shall appear on each essay a motto, and accompanying each there shall be a sealed envelope containing the name and address and the motto of the author, and bearing on its outer surface only the motto of identification. The envelope is not to be opened by the Committee until a decision has been reached as to the most deserving essay and the others have been returned to their respective owners. The Committee shall have power to reject and return all essays, in case none have been found worthy of the medal. Competing essays must be in the hands of the Committee, which is elected each year by the Business Committee, not later than March 1 of each year. The Senn Medal is offered on the same general conditions, the Committee awarding this medal being elected by the Section on Surgery and Anatomy.

NATIONAL EXPANSION.

It is said that the average American is increasing in girth, and that the typical Uncle Sam with his lank body in its swallow-tail and striped trousers is more than ever before a gross caricature of the national type. A New York paper claims that figures collected from clothing dealers show that while the average American of 1889 was easily fitted with a waistband of forty-six inches, which it was then thought would never be exceeded, in 1899 he requires one of forty-seven and a half inches. It goes on to make the calculation that, at this rate of increase, he will reach in 1909, a circumference of forty-nine or fifty inches, and that in A. D. 2899 the American girth will be sixteen feet. The above facts, not the deductions quoted, are credited to one of the scientific government bureaus, and it is stated that the increased consumption of farinaceous and fat-producing foods is alleged as a possible cause. The dairy lunch counters that have sprung up so numerously within the past few years are credited in part with this result. The editor adds his own theories, that the labor-saving inventions, the elevators, telephones, and other contrivances supposed to make people indolent and fat, have their part in producing this result. Whether these are anything more than guesses is doubtful; the real reason of the fact, so far as it is such, is probably yet to be given. There are probably many factors co-operating, not the least of which is the improved physical surroundings of the present generation. The ideal Yankee still exists, but it is a long time since he fairly represented the average American citizen. It will probably be a still longer time, however, before we take the trouble to change our comic national personification.

DOSES IN THE PHARMACOPEIA.

The *Bulletin of Pharmacy*, for October, contains a paper read before the American Pharmaceutical Association, at its recent meeting, by H. B. Mason, on the question of incorporating the maximum and minimum doses of drugs in the coming issue of the Pharmacopeia. At present the work is considered as exclusively one for the pharmacist, while few physicians are acquainted with it and still fewer consult it. The great majority of practitioners, however, who have been asked, have expressed the opinion that the doses should be added to the Pharmacopeia and this, if done, would unquestionably largely increase its circulation. It would give us an authoritative posology, and after all would only follow the practice of every other pharmacopeia except our own. Three objections have been urged to the step; that were this done, there would be a legal stand-

ard established, the exceeding of which might render the prescriber amenable to the law. Mason answers by saying that such an occurrence is unlikely, and the authority of leading therapeutists would be always available in defense except where the variance went beyond science and reason. It might, however, be so stated in the work as to give the prescriber all needed liberty in the rare cases where a greater range of doses is needed. The second objection offered, that there is no definite standard in doses, he points out is a trivial one, as the general consensus of opinion can be readily obtained in regard to any drug, and it is only those that represent the general practice that are required. The remaining one, that doses and therapeutics are foreign to the purpose of the Pharmacopeia, is a matter of minor importance. The question is not whether we shall confine ourselves to the original purpose of the work, but can we make it more useful by adapting it to modern demands. Shall we let the Pharmacopeia go unused because of reverence for the ideas of its founders at the time of its beginning? There is no good reason why we should not take the step that has been taken by the revisers in every other country than our own.

PROGNOSTIC AND DIAGNOSTIC VALUE OF CHEYNE-STOKES RESPIRATION.

The time has not long passed when it was considered that the development of that peculiar type of respiration known as Cheyne-Stokes was almost surely indicative of the early death of the patient, and while cases are on record in which this phenomenon has lasted for many days before death has taken place, nevertheless we are all accustomed to consider that the development of this symptom is one of evil omen. If we mistake not, one of the great English practitioners of this century made the assertion that he had never seen recovery take place in a patient with well-marked Cheyne-Stokes respiration. In this connection, therefore, a paper which has recently appeared in the *British Medical Journal*, by Pembrey, who is the lecturer on physiology in the Charing Cross Hospital, London, is of considerable interest. This writer believes that the Cheyne-Stokes respiration can be observed under certain physiologic conditions in healthy animals and men, and he points out that during hibernation in some of the lower animals an irregular form of intermittent respiration somewhat resembling the Cheyne-Stokes type is commonly met, and that Mosso, the Italian investigator, has found a typical Cheyne-Stokes breathing in the hibernating dormouse. Personally we believe that the prognostic value of Cheyne-Stokes breathing depends, to some extent at least, on its cause. The symptom has certainly been seen in a number of patients when under the influence of chloroform, which patients have recovered, and it is also sometimes observed in those who have been accustomed to take large doses of morphin and who have been suddenly deprived of their accustomed dose. In these two classes this symptom does not seem to possess the gravity that it possesses when it arises from cases of hemiplegia arising from the various cerebral lesions which produce this form of loss of power, nor the gravity which it possesses when seen in such diseases as diabetes and certain types of uremia. It would be of interest if physicians would record cases in which this symptom has been well developed and in which recovery has nevertheless taken place.

INFANTILE CONVULSIONS, NIGHT TERRORS AND EPILEPSY.

For many years the relationship of the three nervous disorders, infantile eclampsia, night terrors and epilepsy, has been considered more or less direct. Within the past two years, much evidence to the contrary has been given. The probable truth of the matter will at last be found in the middle ground that they are not closely related, but they may exist in different combinations; their relationship will then rest on the fact that the first two are indices of a neurotic predisposition which, under unfavorable circumstances, may persist in later life, as the neurosis of epilepsy. The frequency with which infantile convulsions are met is out of all proportion to the epileptic population, although the frequency of the former is commonly exaggerated. Generally the occurrence of infantile eclampsia in several members of the same family is a fair index of its clinical value in any given case as a neurotic factor; the same may be said of night terrors. Recent statistics seem to prove that over one-half of all epilepsies beginning in early life, had their initiative in infantile eclampsia. Convulsions of early life may persist and keep their same general character in the patient's later epileptic career, but the converse of this statement is not always true; hence, the deduction is not to frighten the parents of an eclamptic infant with the bugaboo of epilepsy in later life. Nearly one-half of all eclamptic children never have further neurotic manifestations in later life; the possibility of all eclamptic infants becoming epileptic is analogous to the absurdity of expecting all alcoholic syphilitics will become paretics. Bearing in mind the hallucinatory distinction between ordinary nightmare and the true night terrors, which the latter possess but the former does not, it can be easily seen that night terrors have a decided neurotic basis, notwithstanding some recent writers regard prolonged dyspnea as its main cause. Nearly one-third of all carefully recorded epileptics present, at some time in their lives, a history of night terrors, but the contrary is not true, which shows that, in itself, night terrors are not a salient factor in determining epilepsy. Both night terrors and infantile eclampsia manifest in their slight forms, can hardly be regarded in any stronger light in the determination of epilepsy than that they are indices of a neurotic predisposition.

THE MONEY VALUE OF PAIN.

The judge's charge, in a recent trial for damages in a New Jersey court—see JOURNAL's news items, last week—and the subsequent finding of the jury, raise, or at least suggest, an interesting psychologic question. A man was struck, it is alleged, by a fallen electric wire during a thunder storm, and received apparently a severe electric shock, with the result of producing a peculiar condition of what was claimed to be a sort of hypnotic suggestibility in which he is uncertain as to his own sensations and only feels what he is told he feels. According to the contention of the defense, as

stated in the newspaper accounts, he is never certain when he is in pain, but has to depend on others to know whether he has headaches, his shoe pinches, or he has cramps; in other words, he only feels pain when he imagines or is led to imagine it. The judge charged the jury that damages should only be awarded for actual suffering, and it brought in a verdict for $1,000. Assuming the correctness of the facts as reported, and that this man's sensations are all dependent on his mental beliefs, all he would have to do to avoid pain would be not to believe in its existence. Pain is a very serious reality to most of us, and we would be glad to find it a fiction of the imagination; the craze of "Christian Science" is a proof of this desire. It seems at first sight contradictory to read of damages allowed for actual suffering to a victim of imagined pain, when an equal exercise of the imagination might, it is presumed, abolish all pain. When, however, one considers that suggestibility works both ways and that imaginary pain may possibly be as real to the sufferer as the genuine article, $1,000 damages for such a condition, supposing it real and permanent, seems small. Something may also have been made in the pleas of the warning value of pain which is often a blessing in disguise. The alleged condition is a curious one, and suggestive in many ways other than the medicolegal one specially involved.

SUPERSTITIOUS EXPECTORATION.

The spitting nuisance is largely credited in this country to tobacco chewers and to reckless victims of bronchial or pulmonary disease, and is considered simply an objectionable and unsanitary habit. It may be indulged in for other reasons, as is done by cats, for example, but this is not respectable and is dangerous. In Europe, including Great Britain, however, there seems to be a host of superstitions connected with the act, according to the *Medical Press and Circular*. Thus it says: "In days of antiquity spitting was resorted to in order to ward off dangers, and up to the present time luck is wooed and misfortune avoided by the process of spitting. Newborn children are treated to a lavish expectoration by midwives in certain parts of the country, fishermen spit on their hooks after baiting them, and it is considered to be absolutely essential before washing in the same basin in which a friend has washed, to spit into it, for otherwise a quarrel would be sure to follow. But it is on the continent that the superstition of spitting seems to reach its worst degree. In Oldenburg, for example, the loathsome custom prevails of always spitting three times into the kneading-trough. Again, babies in Hungary are especially singled out as objects of the superstition, the custom there is to spit into the babies' faces to bring them good luck. . . . In Silesia and Bohemia persons generally spit three times when they meet an old woman. . . . Again, in Sweden a great deal of superstitious spitting seems to take place. Persons, for example, spit into their beds before retiring, playing-cards are spit upon when their luck is bad, and every new suit of clothes is made the object of a gross expectoration, but for what reason it is quite impossible to imagine." A knowledge of folk lore and superstitions has not been generally considered an indispensable part of our culture, but it may be well to know some of these things, if it were only to avoid the Oldenburg bread. So far as we are aware, these customs have not been brought to this country to any extent, and it is to be hoped they will not be. We have troubles enough of our own without having to endure the introduction of ritual expectoration on the European plan.

Medical News.

FIRE destroyed the Stone City Home and Hospital, Findlay, Ohio, October 23; loss $50,000.

DR. JOHN H. PACKARD of Philadelphia, who has been abroad for several months, has returned home.

BY THE will of John D. Bleight, who recently died in Philadelphia, $500 has been given the Pennsylvania Hospital.

DR. A. T. NEWCOMB, specialist on diseases of the nose, throat and chest, has removed from Baltimore, Md., to Pasadena, Cal.

LYDIA WOERNER of Philadelphia has been appointed medical missionary to Rajahmundry, British India, and will sail for that place at an early date.

DR. JAMES B. HERRICK, associate professor of medicine in Rush Medical College, Chicago, has gone to Europe, to return in January.

DR. G. BROWN MILLER has been appointed resident gynecologist at the Johns Hopkins Hospital, Baltimore, Md., vice Dr. J. Ernst Stokes, resigned.

AN INQUIRY into the condition and governance of the asylums of Prince Edward Island has been ordered by the local government and is now proceeding.

A BACTERIOLOGIC institute has been established in Vladivostók, the principal Russian port on the Pacific, and another is to be opened at Merv in Central Asia.

MISS CAROLINE SHILL of Philadelphia has left the sum of $200 to the Atlantic City (N. J.) Hospital, to endow a free bed in the new annex of that institution.

DR. D. A. PAYNE, Chicago, has resigned the chair of associate professor of ophthalmology, in the Chicago Clinical School, and gone south on account of ill-health.

DR. J. G. ADAMI, Montreal, will deliver the annual lecture, November 29, before a joint meeting of the Chicago Society of Internal Medicine and the Chicago Medical Society.

DR. GEIKIE, Dean of Trinity Medical College, Toronto, is soliciting funds for the purpose of erecting a monument to Dr. Rolph, the founder of medical education in the Province of Ontario.

OWING TO recent changes in the medical law in Michigan, there has been a considerable rush on the part of medical men in the Province of Ontario to become licensed to practice in that State.

DRUGGISTS in Hamburg have been warned that the full penalty of the law will be enforced if "secret remedies" are sold to the public without a physician's prescription, against the regulations.

A RECENT bequest of 22,000 roubles, by Dr. Brendel to the Society for the Care of Sick Children in Odessa, Russia, and a similar amount by Brodski, the sugar merchant, will enlarge the gynecologic clinic at Kieff.

DR. HENRY P. NEWMAN, Chicago, treasurer of the ASSOCIATION, has returned from his European trip.

The Doctor made Paris his objective point for certain medical investigations.

DR. FREDERICK TICE, Chicago, has tendered his resignation as head physician of the Dunning Asylum. He contemplates two years' study in Europe.

THE JURY in the case of Mr. and Mrs. Charles W. Schaffer vs. Dr. John Ege of Reading, Pa., who entered suit for damages for permanent injuries, and amounting to $35,000, October 14 brought in a verdict for $13,092.

DR. CHARLES A. WILSON, Montreal, has been appointed surgeon-major to the Canadian contingent to the Transvaal. With him are associated Surgeon-Lieutenants Osborne and Fiset and probably Surgeon-Major Nattress of Toronto.

A CHILD, 4 years old, in Hammond, Ind., died of diphtheria recently and the coroner charges the parents with willfully neglecting to bring in medical aid. Their guidance is said to have been the doctrines of "Dr. John Alexander Dowie" of Chicago.

DR. L. DUNCAN BULKLEY, New York City, will give a second series of clinical lectures on diseases of the skin in the N. Y. Skin and Cancer Hospital, Wednesday afternoons, commencing November 1. The course will be free to the medical profession.

THREE NEW leprosoria are to be opened in southern Russian provinces, accommodating 80, 150 and 120 lepers respectively. All lepers who are able to work in the asylums will be compelled to do so, although the products of their labor will not be for sale outside.

A BEQUEST of $3000 has been made to the Phœnixville (Pa.) Hospital by Mrs. Mary Keeler of Spring City, Pa. A further bequest has been made by which the giver agreed to furnish and equip the largest ward in the hospital as soon as the building is completed.

CORONER'S Physician, Dr. A. T. Weston, New York City, has brought suit against the city for $1,000 for services rendered in performing an autopsy last February outside of the Borough of Manhattan and in the line of extra service.

TEN CASES of the plague have occurred outside the sanitary cordon around Oporto, and twelve new cases in the city since our last report—seventeen in all during September—with four deaths. Gierswohl has found the bacilli on the feet of flies in the hospitals and on the corpses of victims of the disease.

A REPORT from Colonel Forwood to General Shafter announces the establishment of a Government Hospital at Honolulu for the care of soldiers going to or returning from the Philippines. The building, which was formerly located in the suburbs of the city, has been removed to Buena Vista Park. It is equipped with 100 beds and is in charge of Major M. M. Wood.

DR. DANIEL R. BROWER, professor of mental diseases, etc., in Rush Medical College, Chicago, gave stereopticon views and an address on his recent Hawaiian trip, before the Ashland Fellowship Club, Chicago, October 20; also an address to the medical students of Chicago, in the Church of the Epiphany, Sunday evening, October 22, on "A Great Physician of the First Century"—St. Luke.

COUNCILS committee of Philadelphia has made an allowance of $60,000 for enlarging buildings in the Insane Department of the Philadelphia Hospital. For the Bureau of Charities an allowance of $1700 was granted for the purchase of a complete X-ray apparatus. The salary of the chief resident physician was raised from $2500 to $2750. The salaries of the fifty district physicians were increased from $240 to $300 yearly.

THE WAR in Africa has called out the patriotism of members of the medical profession in England and many are offering their services as they did in our own country in a like emergency last year. Among these is Sir Wm. McCormac of London, whose offer has been accepted and he goes to the front immediately with the younger members. Already many cases of heroism on the part of surgeons have been reported.

DR. CHARLES SHEARD, M. H. O., Toronto, has just completed a medical examination of the firemen of that city, for the purpose of ascertaining their physical fitness for their respective duties. Examinations were made on 154 out of a total of 175 members, and of these only 89 are first-class men; 35 in the second class embrace those who are unfit for prolonged effort, while the others he considers unfit for firemen's duties. He advocates a properly regulated system of physical training for these men.

B. N. BAKER, president of the Atlantic Transport Line, Baltimore, Md., has offered the British Government a vessel of that line for a hospital ship during the War with the Transvaal. The offer has been accepted and the *Maine* will probably be the vessel placed at the disposal of the British. It will be remembered that during the late war with Spain, Mr. Baker placed the *Missouri*—famous for the rescue in midocean of the *Danemark's* passengers and crew—at the disposal of the United States for a similar use, paying all expenses. The captain and crew of the *Maine* are included in Mr. B.'s offer.

DR. WATSON L. SAVAGE, in a report on the public school system before the Physical Education Society, New York City, has stated that while the school buildings recently erected in that city are highly satisfactory to the advocates of physical education in some respects, in many they are a great disappointment. They are all well equipped with gymnasiums and gymnastic apparatus, but these are not properly utilized. In the Doctor's opinion the system regulating physical education in the public schools is quite wrong. For instance, two supervisors are supposed to give instructions to about two thousand teachers—a manifest impossibility. Instead of this he suggests that there ought to be a single director of physical education with thirty to fifty capable assistants, all on adequate salaries, and only under such circumstances can the desired result be obtained.

THE SIXTEENTH annual meeting of the N. Y. State Medical Association was held at the Academy of Music, New York City, this week. The meeting was in every way most successful, the papers and discussions being of exceptional merit, and the attendance was the largest in the history of the Association, the increase in membership being over sixty. The evening reception in honor of Prof. W. W. Keen, president of the AMERICAN MEDICAL ASSOCIATION; Drs. Reginald Fitz of Boston, and Wm. Osler of Baltimore, was a delightful affair and largely attended. The newly elected officers are: president, E. D. Ferguson, Troy; vice-presidents, Chas. H. Glidden of Little Falls, J. M. Farrington of Binghampton, W. H. Thornton of Buffalo, and J. C. Bierwirth of Brooklyn; treasurer, E. H. Squibb, Brooklyn; secretary, M. C. O'Brien, New York City.

MEDICAL SERVICE IN TRANSVAAL WAR.—According

to the *Lancet* of October 14, the medical service arrangements for the Transvaal expedition are based on the general lines of the British Army Regulations, supplemented by aid from various Red Cross societies of Great Britain, the stationary, general, and base hospitals, medical store depots, hospital ships, nursing staff, field hospitals, etc., all under the command of the officers of the Royal Army Medical Corps. The places of the medical officers proceeding to South Africa for service are being filled at home by the employment of members of the civil profession at special rates. Owing to the prevalence of enteric fever in Natal, every man ordered for service has been given the option of being inoculated with antityphoid serum, and 70 per cent. of the troops have accepted the offer.

THE PLAGUE IN INDIA.—The India correspondent of the *Lancet* (October 14), writing under date of September 21, says that the government of India has under consideration a comprehensive scheme for establishing research laboratories in various points of India. The present laboratory at Muktesar is to have its staff increased and to become the central research laboratory for India, while health officers are to be given charge of the laboratories at Calcutta, Madras, Bombay, Agra, and Lahore. It will cost the government of India about £3,300 per year, and local governments about £6,650. The governor-general has made new regulations regarding taking or sending cultures or other articles containing live germs of the plague. No person who is not a commissioned medical officer, military assistant-surgeon, or medical practitioner in possession of a qualification not lower than that of L. M. S. of the University of Calcutta, Madras, or Bombay, can hereafter, with special permission, take cultures or other articles which he believes to contain living plague germs from one place to another in India. The writer gives the number of deaths from plague for the week preceding his communication as 4400, the deaths in Poona being at the rate of 250 per 1000 per annum.

WITH THE MEDICAL SCHOOLS.—The Board of Regents of the University of the State of California has approved the plan of reorganization submitted by the medical faculty and indorsed by President Wheeler. The changes already made in the medical department are very extensive and promise to be still more radical. The departments of anatomy, physiology and pathology are to be at once, or are actually being, equipped with the fullest and most complete apparatus of all kinds. These departments are also to be in charge of men of ability, who will receive sufficient salaries and confine themselves entirely to their work in the medical department. Prof. Alonzo E. Taylor received the appointment of professor of pathology. Through the generosity of a member of the Board of Regents, this department is being equipped with microscopes, microtomes, hemotometers, polariscopes, electrical resistance apparatus, etc., selected by the head of the department. Private laboratories for original research will also be equipped with the most accurate apparatus for all lines of pathologic research. For this purpose Dr. Taylor goes, almost immediately, abroad. The department of anatomy has been entirely reorganized and placed on a more satisfactory basis. As yet no head has been chosen for this department, but a selection will soon be made. It, as well as the department of physiology, is to be fully equipped as soon as the necessary apparatus, most of which has been ordered, can be obtained. A laboratory for original research on animals has been equipped and several lines of original work are now in progress. It is the intention of the Regents of the University of California to make the medical school one of the important departments of the University, and to place it on a basis equal to that of any medical school in the country. Every effort will be made to fully provide for all the original work that it may be desired to undertake, so that men who desire and are competent to make such investigations may do so without going east or to Europe. Dr. Thomas W. Huntington, for many years chief surgeon of the Southern Pacific Railway Co., at Sacramento, has been appointed associate professor of clinical and operative surgery; Dr. Harry M. Sherman, president of the American Orthopedic Association, professor of the principles and practice of surgery; Dr. J. M. Williamson, formerly professor of anatomy, professor of genito-urinary surgery; Dr. H. C. Moffitt, lecturer on principles and practice of medicine; Dr. J. Henry Barbat, instructor in surgery and surgical anatomy; Drs. Stephen Cleary and C. D. McGettigen, demonstrators of anatomy; Dr. Leo Newmark, clinical lecturer on nervous diseases; Dr. Thos. W. Leland, instructor in physiology; Dr. Philip Mills Jones, instructor in electrophysiology, and librarian; Dr. Jas. F. McCone, instructor in obstetrics. At the commencement of the present college year, Dr. R. A. McLean, for several years past dean and professor of clinical surgery, resigned the former office. Dr. McLean has been in poor health for some time and is not able to attend to his duties; Dr. Thos. W. Huntington was therefore appointed associate professor and will attend to the work in clinical and operative surgery. Dr. A. A. D'Ancona was appointed dean of the faculty. All of the above appointments and changes were suggested by the Faculty at the first of the year, but no official action was taken by the Board of Regents until President Wheeler could pass on the matters..... The registration figures of Columbia University, New York City, show that in the medical department—the College of Physicians and Surgeons—there have thus far been enrolled 735 students, against 686 at the corresponding period in 1898....The registration to date for the autumn quarter, at Rush Medical College, Chicago, is 826, a much greater registration than at the corresponding date in any previous year.

Correspondence.

Paris.

(From Our Special Correspondent.)

PARIS, FRANCE, Sept. 25, 1899.

To the Editor: If I were obliged to spend the rest of my days away from America—an impossible supposition—no place would seem to me so attractive and homelike as Paris. London is mighty and magnificent; Berlin, heavy and handsome; but for American lungs give me the atmosphere of a republic.

It is impossible not to feel at home in this thrifty, noisy, enthusiastic home of Independence, especially for a Chicagoan. The city is not unlike our city in many ways, and the people are not unlike our people, speaking quite personally and within the circle of my own profession.

I can not say too much in favor of the Frenchman as a physician. This visit to Paris, more than any previous one, has brought me into intimate contact with many of the fraternity. Although this is a time when most of the busiest men are taking their annual rest, I have been given many opportunities to see good work and have been shown every possible courtesy, personal and professional. I have made almost daily

visits to all the hospitals of note, and have spent the mornings in one or other of the greater clinics. The Paris doctor has very comfortable hours for work, at least at this season. He is busy in the clinics from 9 or 10 a.m. till noon, and free for the rest of the day. Then he is very exclusive in his mode of life. I should say, rather, seclusion, since I refer only to his manner of advertising and announcing himself to his patients. It is only the "little doctors," they tell me, who allow themselves the publicity of a sign at the door. There must be very few who are willing to be placed in this class, for I have seen a physician's sign—small and inconspicuous at that—in very rare instances. This fashion has its disadvantages. You are often obliged to hunt your doctor in a large apartment building where the doors are all alike—no name-plate on any—and you may ring several bells before you find the right one. However, custom is a severe master, and I suppose it is difficult to cut the first string of ethical red tape.

The professor sits while lecturing, which makes the hour quite informal and conversational. The laboratories are well equipped and have abundance of material. The clinical material is also plentiful. I saw upward of 350 cases run through in a morning in the skin clinic at the Hospital St. Louis. For another thing, the medical man is much respected in the community. In the public institutions, clinics and wards are named for some well-known physician, and the man who has given his life work to hospital and dispensary does not necessarily efface himself thereby. The tricolored flag of France floats over the Bandeloque and Tarnier Clinics, the Pasteur Institute and Péan Hospital, and many similar monuments to the labors of good men and true.

The clinics which I have visited most often have been Dupley's at Hotel Dieu; Richelieu's at Hospital St. Louis; Albarron's, Hospital Necker; Tuffier's at the Lariboissiere, Faure's at Charité; Professors Segond, Pazzi and Bouilly at Salpêtrière, Broca and Cochin hospitals. The three latter men are taking vacations at present, and so I have not had the pleasure of seeing them at work, but I have met them personally and enjoyed them exceedingly. Dr. Segond, who has a warm feeling for Americans as a result of his trip to our continent some four years ago, has been exceptionally kind, and I have received many courtesies from him and his friend, Dr. Paul Muller. The latter is a good friend to Americans in Paris and has looked after the health of some of our best citizens in their sojourn abroad.

In general I have remarked that the French physician is not only courteous to his colleagues, but kind and considerate to his patients. I can not help thinking that this spirit of sympathy and humanity is the outgrowth of republican soil. At least I have not found it so well developed in other European countries.

Then the Frenchman is a deft and skilful operator, cool and capable, notwithstanding the national reputation for nervous excitability. This characteristic is shown also by the patient, who endures supreme physical ordeals with little evidence of shock or depression. In the clinics at Hotel Dieu, the other day Dr. Delbet, surgeon, I saw an operation for cancer of the pylorus, in the course of which the operator removed nearly two-thirds of the stomach and a portion of the intestines, quite as a routine procedure and without exciting any particular comment among the onlookers. In this proceeding he used no fancy stitching or appliances, only two rows of continuous catgut sutures. And a few days before I had seen the same operator at work on a ghastly case of cancer of the intestine under the most trying circumstances. The tumor had been diagnosed as a large pyosalpinx, and hysterectomy had been done before the true condition of things appeared. The operation was continued, however, with the necessary extensive cutting and removal of large portions of intestine. I saw the patient on the next day, not only alive, but looking quite comfortable.

The Parisian love for the beautiful and artistic is manifested in the furnishings and adornment of hospital and dispensary quite as noticeably as in the palaces and boulevards. The wards are bright and inviting, and the waiting-rooms often enlivened with frescoes and floral decorations. Like all buildings in Paris, the hospitals have the large inner court, and this is almost universally well filled with handsome plants.

As to the position of the foreign physician in Paris, there is in force here such an extreme protective policy that overcrowding of the profession is effectually prevented. The university degree, which one is free to take here, does not entitle one to practice in France, and the examination necessary for a certificate is not open to foreigners. I am told, however, that exceptions are sometimes made in the case of those who can secure a proper amount of "influence." There is much reason in this exclusiveness, however, as Paris is so cosmopolitan that without it the ranks of the profession would soon be overrun. It is not to criticize them that I speak of it, but to call attention to the attitude of our own country in the premises. It need not be narrowness, but a just degree of self-respect that should prevent us from welcoming with such effusive warmth every foreigner who comes to us presenting a certificate from Heidelberg or Leipsic or Bonn or Paris, in medicine, literature, language or music. We should not receive so tamely the slight put on our great American universities, whose honorable degrees are not recognized or credited abroad. Just a little bit of healthy reciprocity, ever so good-natured, would wake up this self-satisfied Old World to the worth and merit of the New.

A letter from Paris without any reference to the three great exhibitions she is making for the world, at Rennes, at Rue Chabral and on the banks of the Seine, would be empty reading. So I must add that Dreyfus and Jules Guerin are greater heroes outside of France than here in this big, bustling metropolis. It is such a sad thing for the country, and the better people in the army and out of it, this travesty of military justice, that the best French sentiment tries to cover the wound from foreign eyes, and the absurd incompetence of the civil authorities in the case of the Anti-Semitic League, self-imprisoned in Monsieur Guerin's "Fort" is a matter of grave chagrin to the Parisian.

As for the exhibition of nineteenth century progress, to be held here the coming year, it will certainly serve to re-establish the fame of the city after these trying times are over. The buildings are well under way, the situation is lovely, and from all one can hear and see the exposition of 1900 will surpass in effect anything before attempted in this world of shows. After America's splendid exploit at Chicago, she will not be jealous of this success. Her example has made it necessary; her money is making it possible, and her people will come to see it all and go away saying, as they always do, "There is no city on earth quite like Paris."

H. P. Newman, M.D.

Emigration Leper Laws for America.

New York City, Oct. 14, 1899.

To the Editor:—Apropos of the departure for Europe of Dr. Doty, the health officer of the port of New York, to propose to the health authorities of Bremen and other places "a new method for the control of importation of infectious diseases to America," I ask that you print an article of mine which was published in *Janus* (Amsterdam, Holland), May and June, 1897, as follows: The following laws applying to emigrants should be, in my opinion, promulgated:

1. Emigrants from leprous countries of Europe, like Norway and Sweden, should be visited by the medical officer attached to the United States Consulate at the port of embarkation. If the emigrant is of a leprous family, he should be compelled to leave his clothes and effects behind him, and rig himself out anew, submit himself to personal disinfection, and be reported as sus-

picious to the Board of Health of the state indicated by his ticket. The health officer of that state should keep him and his family under supervision for seven years.

2. It should be a penal offense for a steamship company to carry an emigrant from a leprous country without the health permit of the American Consul.

3. Should a leper precent himself for emigration, to the United States Consulate, he should be turned back to the authorities of his own country.

4. A leper who has escaped supervision or detection at the port of embarkation, and at the port of entry in America, should be reported to his own country through his Consul residing in the port of entry in America, who shall send him back at the expense of his own country.

5. Norwegians and Swedes (and Russians) of leprous families, should choose for settlement, states like Minnesota, Wisconsin, North and South Dakota, and Western Kansas, whose climate is antagonistic to the life and multiplication of the bacilli. Under no circumstances should they settle near the Atlantic coast line, near the northern lakes, or in the cotton belt, whose climate is quite the opposite of the other.

6. Any suspicious emigrant should be for seven years, under what the French call *surveillance de la haute police*, therefore should not be permitted to go from one state to another without the latter being duly informed of the fact by the former.

ALBERT S. ASHMEAD, M.D.

Intubation and Antitoxin in Diphtheritic Laryngitis.

CHICAGO, Oct. 10, 1899.

To the Editor:—Intubation of the larynx in diphtheritic stenosis before antitoxin came into such general use, was much more common than now. Indeed, antitoxin seems to have very largely done away with the necessity for intubation.

It is my firm conviction that: 1, when antitoxin is used early, the larynx will not become involved nearly as often as without it; 2, when the disease commences primarily in the larynx, it is sometimes arrested, requiring no surgical interference; and 3, when intubation is necessary, recoveries are more frequent than before antitoxin days.

My experience in the surgical treatment of diphtheritic laryngitis is limited to 234 cases, the tube having been inserted in the last case twenty-four hours ago, and the patient is still wearing the tube, having a good prospect of recovery. All occurred in private practice. Tracheotomy was done in 30 of these, with a recovery of 24 per cent.; 150 were intubated with a recovery of 40 per cent., and 53 were treated with antitoxin and intubation and show a recovery of 60 per cent. These results speak more forcibly than words, and are about on a par with those obtained by other operators. Some have shown a greater, some a less percentage of recoveries, the difference, depending largely on early or late operating, the type of the disease, mild or severe, malignant or non-malignant. There can be no doubt that the surgical treatment of this disease has steadily advanced, from tracheotomy to intubation, from intubation to intubation with antitoxin. The exact increase in the percentage of recoveries may never be known; we care little or nothing for this. The broad fact remains the same, that a vastly greater number of children recover, with the aid of antitoxin and intubation, than with intubation alone.

ALBERT B. STRONG, M.D.

533 W. Monroe St.

Primary Testicular Mumps.

So. ROYALTON, VT., Oct. 17, 1899.

To the Editor:—I was much interested in Dr. Landon B. Edwards' article in the JOURNAL, October 14, on the above subject. One similar case occurred in my practice several years ago, in a carpenter, a married man, of excellent habits. I was treating several cases of mumps in his family at the time. He was at work on a building across the street from my office and came in saying that his testicles were paining him, and on examination I found they were both swollen and tender. The next day there was an increase of swelling, pain, tenderness, and a rise in temperature. This continued for two or three days more, when a very decided parotiditis occurred. The testicles did not become atrophied and I have since attended his wife in a confinement. For several years I have closely watched literature and society reports and have not received any light from either source on the condition under consideration.

Yours, very truly,

D. L. BURNETT, M.D.

Early Conception Following Labor.

LAPORTE, IND., Oct. 10, 1899.

To the Editor:—Gould and Pyle, in their work "Anomalies and Curiosities of Medicine," mention several cases of early conception after a preceding pregnancy varying from forty hours to twenty-eight days. I desire to place on record another case: Mrs. B. was delivered on Dec. 5, 1898, of a girl. On September 27, 1899, she was again delivered of a boy at full term. She must have become pregnant on or about Dec. 27, 1898, just twenty-two days after the delivery of her first child.

Yours truly,

E. L. ANNIS, M.D.

Washington, D. C.

(From Our Regular Correspondent.)

HEALTH OF THE DISTRICT.

The report of the health officer for the week ended October 14 shows the total number of deaths to have been 139, 74 white and 65 colored. At the close of the week there were 69 cases of diphtheria and 75 of scarlet fever under treatment. There were 74 births and 32 marriages during the week.

CENTRAL DISPENSARY AND EMERGENCY HOSPITAL.

At the meeting of the Board of Trustees of the Hospital, recently held, the report of the attending staff for the past month was presented and showed the total number of cases treated as follows: emergency, 638; dispensary, 2588; ward, 55; deaths, 8; prescriptions, 3210; ambulance calls, 82.

EPISCOPAL EYE AND EAR HOSPITAL.

At the recent meeting of the trustees of this institution, the attending staff reported that during the past nine months, 1111 patients have been treated, 528 white and 537 colored; 112 patients have been received in the wards and 150 operations performed.

Canada.

(From Our Regular Correspondent.)

TORONTO, Oct. 14, 1899.

LUNACY AND CRIME IN QUEBEC.

In a paper on "Judicial Errors in Lunacy," prepared by Dr. Geo. Villeneuve, associate professor of mental diseases and medical jurisprudence, Laval University, and medical superintendent, St. Jean de Dieu Asylum, Longue Pointe, Que., and Dr. E. P. Chagnon, assistant physician, same asylum, and read at the fifty-fifth annual meeting of the American Medico-Psychological Association, held in New York in May last, the writers limit the scope of their investigations to cases which have come under the jurisdiction of the criminal courts of the Province of Quebec and refer only to those lunatics who have been convicted and sentenced. These lunatics who have suffered punishment at the hands of the criminal courts of the province are by them divided into two classes. Class A embraces those unfortunate ones who have been submitted to medical examinations and found insane, but who have been convicted and sentenced by the courts in spite of the opinion of the medical experts who advised of their irresponsibility. These proceedings, the writers denominate "judicial errors" intentional. In Class B are included all those insane persons "whose mental derangement has not been recognized at the

trial and have been sentenced, the fact of their insanity having been passed unnoticed." In these, no medical opinion was solicited, as in the defense, no plea of mental derangement was entered. "Judicial Errors" unintentional, these are styled, and it is with this latter class that the paper deals exclusively. After a reference to statistics in regard to this matter in other countries, as France, England, Germany, Scotland and New York, a table is given for the Province of Quebec, prepared from the reports of the inspectors of prisons and asylums. From this it is seen that the total number of prisoners in the province, from 1881 to 1897 inclusive, was 65,699; "received insane during these years," 1197; "became insane during these years," 155; "transferred to the Asylums during these years," 580; "insane remaining in jail at the end of these years," 90; and "insane committed for protection during these years," 498. Out of the total number of lunatics that were admitted to the common jails of the province, during these seventeen years, viz.: 1197, only 498 were incarcerated for safe keeping while they were waiting for the proper papers to be prepared and made out for their transference to the asylum. This leaves 699 lunatics who were condemned during all those years, an annual average of 40 unrecognized and condemned cases. On their arrival at the prisons, these were classified as insane in order to distinguish them from others who developed insanity while undergoing sentence; and the large majority of these were removed to the asylums within a few months after their sentence. Then in addition there are cases not entered in the records, condemned lunatics, whose mental derangement had been overlooked, simply because the officials were not competent to judge them, on account of their state not being sufficiently obvious. Instances of these cases are cited, and the deliverance of one judge is given in a particular case, where the magistrate sent a young woman to prison with these words: "Whereas a young woman of unknown name, but who calls herself the daughter of God, has been found by this court to be a vagrant, a libertine and a nightwalker, etc." Other examples and cases are instanced of a more lamentable aspect where these unfortunates have not only been condemned by the courts without recognition of their insanity, but, who have been imprisoned among convicts and subjected to the same hard régime. From these facts and figures it is manifest that the judges, left to themselves, have been unable to detect insanity in a number of obvious cases, and that these great injustices and abuses should receive prompt and efficient reformation. The conclusions of the essayists are as follows:

"1. It follows from what we have just said, that judges are very often unable to appreciate rightly the mental condition of the prisoners brought before them for trial, because they are strangers to the special knowledge of medicine.

"2. They should then consider it as one of the duties of their office to order a medical examination of the mental state of the prisoners, when the circumstances of the crime committed by them, their attitude or their past history point to a defective mental condition.

"3. On every occasion, when the defense alleges the irresponsibility of the prisoner, they should order a thorough and independent medical examination, covering all the aspects of the case.

"4. They should confide this examination to those who have made a special study of this branch of science.

"5. The jail physicians should examine all prisoners immediately after their reception, and report to the magistrate all those who show any doubtful mental condition."

MALARIA IN TORONTO AND CANADA.

In 1883, Parke published his sixth English edition on hygiene, in which reference is made to the prevalence of malaria in the city of Toronto: "The town stands on ground, originally marshy. The new barracks are built on limestone rocks of the Silurian age. Intermittent fevers among the civil population; not very prevalent among the troops." In all probability the information given in this work was obtained through the medium of the surgeons, connected with the different British regiments, who were stationed at Toronto up to the year 1867. Toronto is a city which has a gradual slope from its northern confines to its southern extremity on the lake front, but on the east and west aspects is drained by the Don and Humber rivers, whose upper courses defile through deep ravines, and whose mouths open through marshy lands, which have within recent years been almost obliterated. At the time, therefore, of the publication of this work, these data were not correct, as thirty years prior to that date many of these creeks and swamps had been drained into the main sewers of the city, and thence to the water front, as the site of the city was such as to afford splendid natural drainage facilities. Long ago malarial outbreaks had become rare, unless some isolated cases occurring in the neighborhood of the outlets of the Don and Humber, and for a number of years there have been no deaths reported as occurring from this disease. Toronto now has some 230 miles of sewers, and if a Toronto practitioner ever diagnoses a case of malaria, it is generally found to have occurred in a recent resident in the tropics or the United States—and even these are few and far between.

Throughout the entire length and breadth of the Dominion, malaria is now not much seen, and it is doubtful if very many of the younger practitioners have had anything whatever to do with it. Now and again it may prevail to a very slight extent on the northern shores of Lake Erie and in the flat regions in the immediate neighborhood of Lake St. Clair. Along the shores of Lake Ontario, Huron and Superior, it is now no more. In the Province of Quebec, in those regions drained by the broad St. Lawrence, it has practically disappeared; while in the northwest and the Pacific province, it is scarcely to be reckoned with as a factor in producing illness. Still withal, the mosquito is forever with us; but on account of the splendid drainage operations that have proceeded throughout the several provinces, his habitat has been disturbed.

OTTAWA MATERNITY HOSPITAL.

The annual report of this institution has just been issued, and there is a deficit of $231.77, put down to the fact that the Ontario Government had cut down the grant from $300 to $92.14, although the work of the Hospital had steadily been increasing. During the past year there have been 85 patients treated, the largest number for one year since the opening of the institution. Her Excellency, the Countess of Minto, is taking a lively interest in the Hospital, and is discussing the advisability of having a new wing erected in the immediate future, at the cost of $1,500, of which amount $900 is already in the treasury for that purpose. This new addition will be called the "Minto" ward. Votes of thanks were passed by the board to the several physicians of the Capital who have rendered medical services.

Deaths and Obituaries.

JAMES CAMPBELL, M.D., president of the Board of Health of Hartford, Conn., died in that city October 17, from cancer of the stomach. He was born in 1848, and studied medicine in the College of Physicians and Surgeons, New York City, and the College of Medicine, Burlington, Vt., graduating from the latter institution in 1871. He then practiced in Minnesota until 1873, when he went to Europe and spent eighteen months in the hospitals and clinics at Berlin, Prague and Vienna. In 1886 he was called to the chair of obstetrics and diseases of women and children at Yale University medical department. This position he held until this year, and in recognition of his

ability as a lecturer in the position he was recently made professor emeritus by the faculty. The honorary degree of M.A. was conferred upon him by the university in 1891. In 1890 he established at Yale the Campbell gold medal, which is annually awarded to the student in the medical department who has maintained the highest standing in his studies throughout the three years' course. He was a member of the Connecticut Society, Sons of the American Revolution, and also of the Sons of the Revolution, his title of membership in these patriotic societies being his descent from his great-grandfather, who served in the War of the Revolution. Dr. Campbell was for several years the secretary of the Hartford City Medical Society and afterward of the Hartford County Medical Society. He also served for several years as a member of the board of censors of the City Medical Society. At the time of his death he held membership in the Hartford City Medical Society, Hartford County Medical Society, Connecticut Medical Society, New York Academy of Medicine, AMERICAN MEDICAL ASSOCIATION. He was lecturer on life insurance examinations at Yale, and a member of the Association of Medical Directors of Life Insurance Companies of the United States and Canada.

A. M. EVANS, M.D., Middleway, W. Va., died October 6, after a year's illness with paralysis. He was born in 1842, took his degree of M.D. at the University of Pennsylvania in 1874, and became Grand Master of Masons of West Virginia in 1893.

GEORGE H. JONES, M.D., died from apoplexy, at Prince Frederick, Md., October 16. He was chairman of the Democratic State Central Committee of his county and had served in the House of Delegates and as county treasurer. He graduated at the University of Maryland in 1867, and was 54 years old.

ALBERT L. JACKSON, M.D., Washington, D. C., died October 17, aged 42 years. He was a graduate of Howard Medical College and also of Georgetown University. In 1882 he was appointed medical examiner in the pension department, which position he held until his death.

PEDRO Y JIMINEZ, M.D., until recently house surgeon of the Columbus Hospital New York City, died October 7, aged 28 years. He was an alumnus of the College of Physicians and Surgeons, New York, and resigned his hospital position only last July preparatory to a return to Porto Rico.

PAUL ELLWANGER, M.D., died from heart diseases, at Greensboro, Md., October 12. He was a graduate of the Chicago Medical College, and had located for practice in Chicago.

WILLIAM H. HARDEY, M.D., University of Maryland, 1852, died of paralysis, October 9, at "Montrose," near Clarksville, Md. He was aged 79, and school examiner of the county for eight years.

JOHN H. COCHRAN, M.D., died at Havre-de-Grace, Md., October 10, after an illness of ten days, from heart disease. He was born June 25, 1833, and took his M.D. at the University of Maryland in 1860. He was mayor of Havre-de-Grace in 1892-3, and also several times on the city council.

W. M. Abney, M.D., Benton, La., died October 7, aged 56 years....A. F. Brackett, M.D., Goldfield, Iowa., October 9.... Ira E. Coe, M.D., United States Marine-Hospital Service, San Pedro, Cal....L. W. Hooper, M.D., Newport, Tenn, October 6....Assistant-Surgeon W. R. McAdam, United States Marine-Hospital Service, of yellow fever, at Key West, Fla., October 12....Henry W. Murdoch, M.D., New Richmond, Wis., October 7, aged 77 years.. J. Sherman, M.D., Cherokee, Iowa, October 10....C. L. Von Bach, M.D., Kansas City, Kan., September 29, aged 60 years.

DEATHS ABROAD.

Prof. Domingos Freire, Rio Janeiro, official delegate to the International Medical Congress at Brussels in 1876 and at Washington in 1887, and sent by the Government to Berlin in 1890 to investigate Koch's methods of treating tuberculosis, is dead. His name is best known outside of his own country by his discovery of the yellow fever germ and methods of vaccination with it, but Freire's "cryptococcus xanthogenicus" was never accepted in scientific circles, and many of his own countrymen were the most skeptical. He continued its propaganda to the last. He published a large number of works on organic chemistry and hygiene, and was in his 57th year when he died.

Dr. Kirn, professor of psychiatry at Freiburg, was drowned in Switzerland recently.....T. Puschmann, professor of the history of medicine at Vienna, "the Nestor of medical historians," is dead....James B. Campbell, M.D., London, Ont., died October 12....Dr. Marquis, Brantford, Ont., also died during the week....Other deaths are: J. B. Canroy, professor of biology at Louvain; C. P. Kowalowsky, professor of hygiene at Warsaw.

Association News.

Committee on National Legislation.—The committee of the AMERICAN MEDICAL ASSOCIATION on National Legislation, appointed at the Columbus Meeting, consisting of Dr. H. L. E. Johnson of Washington, D. C., chairman; Dr. Welch of Johns Hopkins, Baltimore, and Dr. Wm. L. Rodman of Philadelphia, will shortly hold a preliminary meeting to map out the policy of the Committee for the coming year in keeping with the resolution of the ASSOCIATION, viz.: "*Resolved*, That the Special Committee on Legislation be authorized to invite, in the name of the AMERICAN MEDICAL ASSOCIATION, the Army Medical Service, the Navy Medical Service, the Marine-Hospital Service, and each state society of legally qualified practitioners of medicine, to send one delegate each, to a conference to be held at Washington, D. C., at such time as the Committee may determine; such conference to consider the medical and sanitary legislation now pending, and the members to report to their respective societies, such action as, in their judgment, ought to be taken."

Miscellany.

Sewage Irrigation.—According to the *Scientific American* of October 7, investigations have been made of sewage irrigation on the truck farms south of Los Angeles, Cal. The health officers have recommended the prohibition of the sale of sewage for the irrigation of land where certain kinds of fruits, vegetables and garden products are grown, stating that the use of sewage for that purpose is injurious.

Clinical and Therapeutic Experiences with Tetanus.—According to *Zeitsch. Klin. Med.*, xxxvii, 3 and 4, the Maternity at Prague has been fighting an epidemic of tetanus, for the last year or two, and it has been finally stamped out by closing the clinic and disinfecting for a second time, and since then injecting every patient requiring surgical intervention, with a preventive dose of Tizzoni's tetanus antitoxin. This antitoxin as a curative in all except the puerperal cases, did not arrest the existing spasms, but evidently prevented the extension of the disease process to the brain centers, whose function is indispensable to life.

Infantile Eczema.—According to Marfan, *Med. Press and Cir.*, October 24, infantile eczema is due to dyspepsia. The malady exists principally on the face and on the head, extending to different parts of the body, only after having occupied these regions. It commences in the third or fourth month, and, if left to itself, disappears only after weaning. It sometimes affects a special form, the moisture disappears, and the affection thereby merits the name of dry eczema, but this transformation seems to take place especially when the general condition is modified, when, for instance, the child who had been fat seems to waste away. What constitutes the real danger of infantile eczema is that frequently the surface of the disease becomes infected and produces divers complications.

and in particular impetigo; sometimes bronchopneumonia supervenes. The cause of this eczema resides generally in overfeeding provoking digestive troubles.

Huchard's Sign.—The difference in the pulse between the standing and recumbent posture is less in persons with arterial hypertension, and the proportion may even be reversed. Some tests reported in the *Jour. de Med. Int.*, 2, showed that a healthy young man had a pulse of 68 reclining, with 84 standing. A person with pronounced arteriosclerosis with interstitial nephritis and albuminuria, on the contrary, had 76 reclining and 72 standing. Another with nephritis *a frigore* had a pulse of 88 when reclining and 120 standing.

A Universal Antidote.—The *Pharmaceutical Era*, October 5, emphasizes the use of milk as a universal antidote applicable to most cases of poisoning. By its fatty matter and its casein, it protects the mucous membrane against the corrosive action of acids, alkalies, and other caustic or irritant substances. The chemical rôle of casein is here very remarkable and very valuable. It is able to fill the double part of acid and of base, in the presence of compounds with which it is brought in contact. It not only coagulates under the action of acids, by combining with them, but it also yields a precipitate with most mineral bases, forming insoluble caseates. If precipitation does not immediately take place with a product having a given reaction—acid or basic—this precipitate will appear through the intervention of another substance of contrary reaction. Dr. Crowzel proposes to add to the milk 5 per cent. of borate of soda. This salt is not toxic, and is employed because it precipitates as insoluble borates all the mineral bases, except harmless or slightly poisonous alkaline bases. The poison acids decompose it, seizing on the soda and setting free boric acid, which is less poisonous and less soluble. The mixture of borate of soda and milk is an antidote at once neutralizing and precipitant. It can be used especially with mineral poisons, although we must except cyanids, ferrocyanids, ferricyanids, chlorates, nitrates, arsenites arseniates and oxalates. Of these the first three are precipitable by a mixture of ferrous and ferric sulphate, while chlorates and alkaline nitrates can not be precipitated by any offensive reagent. Arsenites and alkaline arseniates can be eliminated by magnesia. In any case no risk is run, and good may be done by giving milk with borate of soda to one who is thought to have been poisoned. It is the first thing to be done after emptying the stomach. If arsenic is suspected, magnesia should be given. If there are vegetable poisons, the best antidote is a 1 per cent. solution of permanganate of potash, which is harmless in this degree of dilution, and is easily obtained.

Hardening Plaster of Paris.—The *Pharmaceutical Era*, October 12, points out that plaster of Paris may be caused to set more quickly if some alum be dissolved in the water used for rendering it plastic. If the gypsum is first moistened with a solution of alum, and then again burned, the resulting compound sets very quickly and becomes as hard as marble. Borax may be similarly employed. In 1877 the Prussian Government awarded three prizes for inventions submitted at its invitation of processes for hardening plaster-of-Paris casts. The principle consists in this, that the objects are to be treated with a solution of caustic baryta. But it has been found that no matter how deep this penetrates, the baryta is again drawn toward the surface when the water evaporates, a portion efflorescing on the outside, and only a thin layer remaining in the outer shell, where it is converted into carbonate. This at the same time stops up the pores, rendering it impossible to repeat the operation. It was later found that the whole mass of the cast might be hardened by applying to it with a brush made of glass bristles, a hot solution of baryta. To prevent separation of the crystallized baryta at the surface, the object must be raised to a temperature of 60 to 80 C. To produce good results, however, it is necessary to add to the plaster before casting certain substances with which the baryta can combine. These are silicic acid in some form, or the sulphates of zinc, magnesium, copper, iron, aluminum, etc.

Prostitution in San Francisco.—There have been some rather unusual and interesting developments in regard to the novel scheme of some enterprising men of San Francisco for the centralization of prostitution. As stated by the JOURNAL some weeks ago, a company called "The Twinkling Star Improvement Co.," was formed, and a large building erected with alleys and cribs inside the outer walls. Numerous citizens of the vicinity objected and the promoters of the enterprise were arrested for violation of the law in regard to the letting of property for immoral purposes. The cases have been pushed and the court of trial sentenced the men to six months' imprisonment. In spite of their arrest and trial, no effort was made by the police to close the dive. It is stated that the arrested promoters threatened to close every house of prostitution in the city if the case against them was pressed, and that this threat influenced the chief of police, with the result that the dive remained open.

The Company printed and circulated a petition, which was very generally signed. It was "from the Citizens of San Francisco, to I. W. Lees, Chief of Police," and petitioned that no steps be taken toward closing the Hotel Nymphia, at least until the superior court determined whether the directors of the Company were or were not guilty of an offense. It further states that, for the better protection of our homes and families, this subject should be fearlessly faced whenever the occasion demands, and that any steps intended to centralize the prostitutes of the city, and where they may be subjected to reasonable regulation and restriction, would be steps taken in the right direction. It therefore protests against scattering these unfortunate women at large throughout the community, "where they will undoubtedly become missionaries of vice, and taint and degrade reputable women and reputable localities." It also points out that "not only is San Francisco a great commercial center, and seaport town, but within a recent period has become to a certain extent a military center"; and that, as there are not only thousands of sailors to be reckoned with in this problem, but also large bodies of soldiers entering and leaving the city, "the protection of reputable women demands that some such safety-valve as the Hotel Nymphia should be tolerated." Further, it reads:

"We beg leave further to point out that, so far as the Hotel Nymphia itself is concerned, its location, in Chinatown, is such as to remove it from the ordinary and usual paths of all who do not purposely seek it. No better site for an establishment of this kind could possibly be suggested than the present one; and we are given to understand that the arrangements there made for the preservation of order and the maintenance of sanitary regulation, and the exclusion of minors, are as nearly perfect as any that could be devised.

"We trust, therefore, that in the interests of the reputable women of this community, and in the interest of the sanitary condition of the city and its inhabitants, you will not act hastily in this matter."

Whether or not this most remarkable document, which was extensively signed, did much or little to influence the judgment of the Chief of Police, can not be said. But the Hotel Nymphia is still open and drawing crowds of human flies to its rottenness.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., from October 6 to and including Oct. 19, 1899:

Wiley L. Athey, acting asst.-surgeon, from New York City to the Department of California.

Alfred E. Bradley, major and surgeon Vols. (captain and asst.-surgeon U. S. A.), to represent the medical department of the army at the meeting of the American Public Health Association in Minneapolis, Minn., October 30 to Nov. 3, 1899; also from duty as acting chief surgeon of the Department of Dakota to post duty at Fort Snelling, Minn.

Robert Burns, recently appointed captain and asst.-surgeon Vols., to rank from Sept. 9, 1899, is assigned to the 49th Vol. Inf. which he will join on its arrival in the Philippine Islands.

Peter J. A. Cleary, lieutenant colonel and deputy surgeon-general, U. S. A., to duty at Fort McPherson, Ga.

Francis G. Engelhardt, acting asst.-surgeon, from Syracuse, N. Y., to the Department of California.

Joseph B. Girard, major and surgeon, U. S. A., from Jefferson Barracks, Mo., to the medical supply depot at St. Louis, Mo.

William G. Gregory, acting asst.-surgeon, from Cave in Rock, Ill., to San Diego Barracks, Cal.

Thomas D. Ingram, acting asst.-surgeon, sick leave extended.

Simon P. Kramer, major and surgeon, Vols., honorably discharged on tender of his resignation, to take effect Oct. 31, 1899.

George B. Lawrason, acting asst.-surgeon, from Washington, D. C., to New Orleans, La., for annulment of contract.

Charles H. Lowell, acting asst.-surgeon, sick leave extended.

Charles E. Marrow, lieutenant and asst.-surgeon U. S. A., from duty in the Department of Santiago and Puerto Principe to the Department of California.

Clarence B. Millhoff, lieutenant and asst.-surgeon, U. S. A., from the general hospital at San Francisco, Cal., to duty with troops going to Manila, P. I.

William F. de Niedmann, major and surgeon, Vols., leave of absence extended.

Walter Reed, major and surgeon, U. S. A., to represent the medical department of the army at the meeting of the American Public Health Association in Minneapolis, Minn., October 30-Nov. 3, 1899.

John T. H. Slayter, acting asst.-surgeon, from Cambridge, Mass., to the Department of California.

William E. Stamm, acting asst.-surgeon, from Kansas City, Kan., to the Department of California.

Francis M. C. Usher, lieutenant and asst.-surgeon, U. S. A., leave of absence extended.

Stanley S. Warren, acting asst.-surgeon, from Hot Springs, Colo., to Fort Clark, Texas.

Marshall W. Wood, major and surgeon, U. S. A., from Honolulu, H. I.

Robert S. Woodson, captain and asst. surgeon, U. S. A., from Fort Clark, Texas, to the Department of California.

Joseph P. Wright, colonel and assistant surgeon-general, U. S. A., from the medical supply depot at St. Louis, Mo. to the Department of Dakota as chief surgeon.

William C. Berlin, appointed lieutenant and asst.-surgeon Vols., to rank from Oct. 17, 1899, and assigned to the 45th Inf. Vols.

Henry P. Birmingham, major and surgeon U. S. A., from Fort Douglas, Utah, to the Department of California.

George M. Bradfield, acting asst.-surgeon, from Fort Columbus, N. Y., to duty at Fort Ontario, N. Y.

John R. Clark, acting asst.-surgeon, from the General Hospital, San Francisco, Cal., to duty with troops going to the Philippine Islands.

Frank Donaldson, lieutenant and asst.-surgeon, 45th Inf. Vols., honorably discharged on tender of his resignation, to date from Oct. 17, 1899.

Charles R. Gill, acting asst.-surgeon, now at Fort Hamilton, N. Y., is assigned to duty at that post and relieved from further service in the Department of Matanzas and Santa Clara.

James B. Hallwood, acting asst.-surgeon, from the 39th Inf. Vols., at Fort Crook, Neb., to the General Hospital, San Francisco, Cal.

Aubray F. Higgins, acting asst.-surgeon, now at Jefferson Barracks, Mo., to report for temporary duty with the 49th Inf. Vols.

Evan P. Howell, acting asst.-surgeon, from the Department of California to duty with troops going to the Philippine Islands.

Thomas D. Ingram, acting asst.-surgeon, from duty at Fort McIntosh, Texas, and on the expiration of his present sick leave, to report at Washington, D. C., to the surgeon-general.

Arthur Jordan, acting asst.-surgeon, from Richmond, Va., to San Francisco, Cal., for duty in the Department of California.

Albert H. Macbeth, acting asst.-surgeon, from Buffalo, N. Y., to the Department of California.

Louis M. Maus, major and surgeon U. S. A., from Fort Hamilton, N. Y., to San Francisco, Cal., for duty in that department.

William Grey Miller, acting asst.-surgeon, from the Detention Camp at Angel Island, San Francisco Harbor, to duty with troops going to the Philippine Islands.

Frank J. O'Hare, acting asst.-surgeon, from New York City to temporary duty at Fort Myer, Va

James B. Pascoe, acting asst.-surgeon, from New York City to duty in the Department of California.

Hugh L. Taylor, acting asst.-surgeon, from Vancouver Barracks, Wash., to Fort Douglas, Utah.

James S. Wilson, lieutenant and asst.-surgeon, U. S. A., former orders directing him to appear before a board for examination for promotion, revoked.

On October 18, 1899, by direction of the Secretary of War, paragraph 18, S. O. No. 202, August 29, 1898, convening a board of medical officers to meet on the hospital ship *Missouri* for the examination of certain officers of the medical department for promotion, was revoked.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending Oct. 21, 1899:

Surgeon O. D. Morton, detached from the *Badger* when put out of commission and ordered to temporary duty on the *Ranger*; on arrival at the Asiatic station ordered to the *Monadnock*.

P. A. Surgeon L. I. Young, ordered to be examined at the Mare Island navy yard, October 24, chapter 15, title 3, Device home and to wait orders.

P. A. Surgeon J. Stoughton, detached from the *Monadnock*; when relieved, and ordered to the *Bennington*.

Asst.-Surgeon J. J. Snyder, ordered to the *New Orleans*.

Asst. Surgeon D. G. Beebe, detached from the *Bennington*, when relieved, and ordered to the *Ranger*.

P. A. Surgeon J. C. Rosenbleuth, detached from treatment at the naval hospital, Chelsea, Mass., and granted sick leave for one month.

Asst.-Surgeon R. W. Plummer, detached from the hospital, New York navy yard, and ordered to temporary duty on the *New Orleans* for passage to the Asiatic Station.

P. A. Surgeon H. D. Wilson, directed to proceed home and to wait orders.

P. A. Surgeon H. D. Wilson, order of October 17 modified; detached from duty on the *Solace*.

Surgeon H. T. Percy, detached from the *Olympia* when put out of commission, and ordered home and to wait orders.

Asst.-Surgeon D. H. Carpenter, detached from the *Olympia*, when put out of commission, and ordered home and to wait orders.

Pharmacist A. Hammar, detached from the *Olympia*, when put out of commission, and ordered to the Mare Island navy yard.

Asst.-Surgeon E. Thompson, detached from the *Manila* and ordered to the *Celtic*.

Asst.-Surgeon W. E. High, detached from the *Celtic* and ordered to the *Manila*.

Asst.-Surgeon H. H. Haas, detached from treatment at naval hospital, Yokonoma, Japan, and ordered to the *Baltimore*.

Marine-Hospital Changes.—Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended Oct. 20, 1899.

Surgeon Eugene Wasdin, to proceed to Berlin, Germany, for special temporary duty.

P. A. Surgeon C. P. Wertenbaker, to proceed to Montezuma, Georgia, for special temporary duty, Oct. 13, 1899.

Asst.-Surgeon C. E. Decker, relieved from "waiting orders" and placed on duty to date from Oct. 7, 1899.

APPOINTMENT.

Frank Boyd of Kentucky to be Acting Assistant-Surgeon, U. S. Marine Hospital-Service, for duty at Paducah, Kentucky.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended Oct. 20, 1899:

SMALLPOX—UNITED STATES.

Kansas: Butler County, October 11, 9 cases, 1 death.
Massachusetts: Chelsea, October 7 to 14, 4 cases; Everett, October 1 to 14, 3 cases, 2 deaths; Melrose, October 7 to 14, 1 case.
Michigan: Saginaw, October 1 to 7, present in two localities.
Mississippi: Natchez, October 12, 4 cases.
Ohio: Cincinnati, October 7 to 14, 1 case
Pennsylvania: Pittsburg, October 7 to 14, 1 case.
Virginia: Portsmouth, October 7 to 14, 1 case, 1 death.
Washington: Orcas Island, October 6 to 14, 14 cases, 1 death.

SMALLPOX—FOREIGN.

Brazil: Bahia, September 2 to 6, 1 case.
Greece: Athens, September 23 to 30, 7 cases, 3 deaths.
India: Bombay, September 12 to 19, 9 deaths; Madras, September 9 to 15, 1 death.
Mexico: Chihuahua, October 1 to 7, 2 deaths; Mexico, October 1 to 7, 2 deaths.
Russia: Moscow, September 16 to 23, 2 cases, 2 deaths; Warsaw, September 16 to 23, 4 deaths.
Turkey: Erzeroum, September 2 to 9, 4 cases, 1 death.

YELLOW FEVER—UNITED STATES.

Florida: Key West, October 6 to 16, 182 cases, 9 deaths.
Louisiana: New Orleans, October 12 to 17, 1 case.
Maryland: Baltimore, October 7 to 14, 1 case, 1 death (taken from steamship *Armator*, from Santiago de Cuba).

CHANGE OF ADDRESS.

Abbott, A. C., from 221 S. 44th St. to 4229 Baltimore Ave, Philadelphia.
Beebe, J. E., from 1066 Winthrop to 2668 Magnolia Ave, Edgewater Sta., Chicago.
Buffington, W. R., from Magnolia to Harlow, Ark.
Bridenstine, S. J., from Port Orchard to Ballard, Wash.
Briggs, T. C., from 191 Island St., Minneapolis, Minn. to Centralia, Wash.
Cole, R. King, from Dallas, Texas to M. K. & T. Ry Hospt., Sedalia, Mo.
Conway, A. J., from Battle Creek, Mich. to Sanitarium, Boulder, Colo.
Derosier, G. W., from San Francisco to Colusa, Cal.
Denison, C. E., from 215 W. 34th to 68 W. 71st St., New York City.
Dickson, —, from New Orleans to 324 Texas St., Shreveport, La.
Davis, E. A., from Hicks Warf, Va. to Mammouth, W. Va.
Furlong, M., from 228 E. 47th St. to 2136 Indiana Ave, Chicago.
Gleitsmann, E., from 118 Park St. to 654 N. Hoyne Ave, Chicago.
Goelet, A. H., from 116 W. 74th to 70th and Broadway, New York City.
Hotopp, G., from New Castle to Glenwood Springs, Colo.
Headrick, C. M., from 1244 to 1219 K St., Lincoln, Neb.
Hare, J. D., from Lincoln to Waverly, Neb.
Howard, E. F., from care Banks Drug Store to Piazza & Batto Bldg, Vicksburg, Miss.
Horton, R. W., from Wynnewood, I. T. to Fort Worth, Texas.
Hartshorn, W. E., from New Haven, Conn. to care Roosevelt Hospt., New York City.
Hunter, G. F., from Denver, Colo. to 900 Sutter St., San Francisco, Cal.
Kadlubowski, T. L., from Detroit, Mich. to 265 Chapin St., South Bend, Ind.
Kellogg, G. M., from Chicago to Prescott, Arizona.
Long, R. D., from 7100 So. Chicago Ave. to 513 W. Harrison St., Chicago.
Lee, Elmer, from 10 W. 49th to 16 E. 47th St., New York.
Mitchell, J. M., from 697 Jackson Boul. to 42 Laflin St., Chicago.
Moody, H. A., from Bailey Springs to 938 Government St., Mobile, Ala.
McCoffrey, P. J., from Pittsburg, Pa. to 68 Luther St., Cleveland, Ohio.
McCurdy, J. R., from Monongahela to 3248 Chestnut St., Philadelphia.
McConachie, A. D., from 16 W. Franklin to 805 N. Charles St., Baltimore, Md.
McGill, J. D., from 272 Montgomery to 124 Mercer St., Jersey City, N. J.
McKinney, W. T., from 108 W. Chestnut to 26th and Jefferson Sts., Louisville, Ky.
McKee, H. N., from La Gro to Woodburn, Ind.
Munn, C. E., from Fort Logan, Colo. to Topeka, Kans.
Niedringhaus, R. E., from 2310 N. 14th St. to 2238 University St., St. Louis, Mo.
Pine, O. S., from St. Paul to Minnehaha, Minn.
Payne, D. A., from Chicago, Ill. to Gainesville, Texas.
Steen, E. R., from Chicago to Silver Cross Hospt., Joliet, Ill.
Snydacker, E. F., from London, England to care Baronin V. Waugenheim, Lederer Gasse, Vienna, Austria.
Starner, A. A., from Mt. Hope to Danville, Ohio.
Shastid, T. H., from Battle Creek to 1129 Michigan Ave, Ann Arbor Mich.
Shelby, P. A., from 760 6th St. to 512 W. Broadway, Louisville, Ky.
Stogel, J. B., from Chicago, Ill. to Hammond, Ind.
Sowers, Z. T., from Port Hope, Canada, to 1320 New York Ave, Washington, D. C.
Wolfe, L. E., from Freeburg to Manheim, Pa.
Weber, W. C., from 405 Prospect St. to Osborn Bldg, Cleveland, Ohio
Yarbrough, C. C., from 293 Boulevard West, to 352 Field Ave, Detroit, Mich.